

HTML

CCAPDEV T1 AY 2022-2023

Outline

- Markup language vs Programming Language
- Basic HTML structure
- HTML tags
- Hands-on exercise/Assignment for next meeting

HTML

Hypertext Markup Language

Markup Languages

- Markup languages allow encoding of text semantics in an electronic document.
- For HTML, it describes the structure of text presented in a webpage.
- Different from programming languages
- **Tags** are used to define elements in the document, according to their importance/purpose

Markup Language

- Annotating documents for *presentation*
- Interpreted by the *browser*
- Examples:
 - HTML
 - XML
 - XHTML
 - CityGML

Programming Language

- Set of *logical instructions* for the computer to execute
- Compiled by a *compiler* or interpreted by an *interpreter*
- Examples:
 - C, C++
 - Java
 - Python

Basic HTML Structure

```
<> basic_structure.html X
<> basic_structure.html > ...
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>My Title</title>
5      </head>
6      <body>
7          HTML Body
8      </body>
9  </html>
10
```

Basic HTML Structure

```
<!DOCTYPE html>
```

- specifies that the document is to be read as an HTML document.

```
<html>
```

- the root element of an HTML page

Basic HTML Structure

`<head>`

- contains meta information about the document

`<title>`

- specifies the title of the document

`<body>`

- specifies the content of the page

`<h1>`

- defines a heading

HTML Tags (Syntax)

- **HTML tags** define the boundaries of the structures of the content.
 - They usually come in **pairs** (e.g., `<html>` and `</html>`)
- Tags are considered as the **elements** of the content.

```
<tag> content </tag>
```

```
<p> Hello World! </p>
```

HTML tags are not case-sensitive; however, it is recommended to use lowercase letters in defining tags.

HTML Tags (Syntax)

Metadata of the elements can be added through **attributes** which are always placed in the opening tag. The value of the attribute are enclosed in “quotes”.

```
<tag attr="value"> content </tag>
```

```
<p id="message"> Hello World! </p>
```

HTML Tags (Syntax)

Some tags don't have any content, like images. These are what we call **empty tags**.

```
<tag>            </tag>
```

```
</img>
```

For empty tags, we can “omit” the closing tag by doing this:

```

```

HTML Tags (Syntax)

Special characters in HTML need to be escaped for it to be displayed properly on the browser.

Special Character	Escape Syntax
<	<
>	>
&	&
“	"

Note the semi-colon!








































HTML Tags (Syntax)

Comments are also allowed in HTML.

```
<!-- content -->
```

```
<!-- This is a sample comment -->
```

Some Examples of HTML Tags

A	<code><body></code>	 <code><details></code>	<code><frameset></code>	<code><isindex></code>	 <code><meter></code>	 <code><progress></code>	<code><strike></code>	
<code><a></code>	<code>
</code>	<code><dfn></code>				<code></code>	U	
<code><abbr></code>	<code><button></code>	<code><dialog></code>	G H	J K	N	Q	<code><style></code>	<code><u></code>
<code><acronym></code>		<code><dir></code>	<code><h1></code>	<code><kbd></code>	 <code><nav></code>	<code><q></code>	<code><sub></code>	<code></code>
<code><address></code>	C	<code><div></code>	<code><h2></code>	 <code><keygen></code>	<code><nobr></code>		 <code><summary></code>	
<code><applet></code>	 <code><canvas></code>	<code><dl></code>	<code><h3></code>		<code><noframes></code>	R	<code><sup></code>	V
<code><area></code>	<code><caption></code>	<code><dt></code>	<code><h4></code>	L	<code><noscript></code>	 <code><rp></code>		<code><var></code>
 <code><article></code>	<code><center></code>		<code><h5></code>	<code><label></code>		 <code><rt></code>	T	 <code><video></code>
 <code><aside></code>	<code><cite></code>	E	<code><h6></code>	<code><legend></code>	O	 <code><ruby></code>	<code><table></code>	
 <code><audio></code>	<code><code></code>	<code><element></code> 	<code><head></code>	<code></code>	<code><object></code>		<code><tbody></code>	W
	<code><col></code>	<code></code>	 <code><header></code>	<code><link></code>	<code></code>	S	<code><td></code>	 <code><wbr></code>
	<code><colgroup></code>	 <code><embed></code>	 <code><hgroup></code>	<code><listing></code>	<code><optgroup></code>	<code><s></code>	<code><template></code> 	
B	<code><content></code> 		<code><hr></code>		<code><option></code>	<code><samp></code>	<code><textarea></code>	XYZ
<code></code>		F	<code><html></code>	M	 <code><output></code>	<code><script></code>	<code><tfoot></code>	<code><xmp></code>
<code><base></code>		<code><fieldset></code>		 <code><main></code>		 <code><section></code>	<code><th></code>	
<code><basefont></code>	D	 <code><figcaption></code>	I	<code><map></code>	P	<code><select></code>	<code><thead></code>	
 <code><bdi></code>	 <code><data></code>	 <code><figure></code>	<code><i></code>	 <code><mark></code>	<code><p></code>	<code><shadow></code> 	 <code><time></code>	
<code><bdo></code>	 <code><datalist></code>	<code></code>	<code><iframe></code>	<code><marquee></code>	<code><param></code>	<code><small></code>	<code><title></code>	
<code><bgsound></code>	<code><dd></code>	 <code><footer></code>	<code></code>	 <code><menu></code>	 <code><picture></code>	 <code><source></code>	<code><tr></code>	
<code><big></code>	<code></code>	<code><form></code>	<code><input></code>	 <code><menuitem></code>	<code><plaintext></code>	<code><spacer></code>	 <code><track></code>	
<code><blink></code>	<code><decorator></code> 	<code><frame></code>	<code><ins></code>	<code><meta></code>	<code><pre></code>	<code></code>	<code><tt></code>	
<code><blockquote></code>								

Visit the [Mozilla Developer Network](https://developer.mozilla.org/en-US/docs/Web/HTML/Element) to understand more about these tags.

<https://developer.mozilla.org/en-US/docs/Web/HTML/Element>

PERIODIC TABLE OF HTML TAGS

[INFOGRAPHICS]

<div><div><div>BASIC HTML</div><div>FORMATTING</div><div>FORMS AND INPUT</div><div>FRAMES</div><div>IMAGES</div></div><div><div>AUDIO / VIDEO</div><div>LINKS</div><div>LISTS</div><div>TABLES</div><div>STYLES AND SEMANTICS</div></div><div><div>META INFO</div><div>PROGRAMMING</div></div></div>																							
1 Dt <doctype>																				102 Mt <meta>			
2 Hl <html>	8 Hr <hr>																			103 Be <base>			
3 Ttl <title>	9 Cm <!-- -->																			104 Spt <script>			
4 By <body>	10 Ar <abbr>	14 Bo <do>	18 De 	24 Mk <mark>	30 Rt <rt>	36 Sub <sub>	42 Fm <form>	48 On <option>	54 Ot <output>	60 Fgc <figcaption>	66 Vd <video>	72 Li 	78 Tl <table>	84 Tbd <tbody>	90 Spn 	96 Ad <aside>				105 Nst <noscript>			
5 Hh <h1> to <h6>	11 As <address>	15 Bq <blockquote>	19 Dn <dfn>	25 Mr <meter>	31 Ry <ruby>	37 Sup <sup>	43 It <input>	49 Lbl <label>	55 If <iframe>	61 Fg <figure>	67 A <a>	73 Dt <dt>	79 Cn <caption>	85 Tf <tfoot>	91 Hdr <header>	97 Ds <details>				106 Ed <embed>			
6 P <p>	12 B 	16 Ct <cite>	20 Em 	26 Pre <pre>	32 S <s>	38 Tm <time>	44 Ta <textarea>	50 Fs <fieldset>	56 Ig 	62 Pr <picture>	68 Lk <link>	74 Dd <dd>	80 Tr <tr>	86 Cl <col>	92 Ft <footer>	98 Dg <dialog>				107 Ot <object>			
7 Br 	13 Bd <bd>	17 Cd <code>	21 I <i>	27 Ps <progress>	33 Sp <samp>	39 U <u>	45 Bn <button>	51 Ld <legend>	57 Mp <map>	63 Ao <audio>	69 Nv <nav>	75 Mu <menu>	81 Td <td>	87 Sl <style>	93 Sn <section>	99 Da <data>	101 Hd <head>			108 Pm <param>			
		22 Is <ins>	28 Q <q>	34 Sm <small>	40 Vr <var>	46 St <select>	52 Ds <datalist>	58 Aa <area>	64 Sc <source>	70 Ul 													
		25 Kdb <kbd>	29 Rp <rp>	35 Sg 	41 Wr <wbr>	47 Op <optgroup>	53 Kn <keygen>	59 Cs <canvas>	65 Tk <track>	71 Ol 													

An interesting way of presenting the HTML elements.

<https://html-online.com/articles/html-tags-periodic-table-infographics/>

<head>

- Used for metadata regarding the page.
- Defines the document title, styles, scripts, and other meta information about the page.

```
<html>  
  <head>  
    <title>  
      This is the title of the page  
    </title>  
  </head>  
  ...  
</html>
```

<title>

- This tag defines the title of the HTML document. It shows on the (1) browser tab, (2) bookmark title, and (3) search engine results.
- This is defined inside the <head> tag.

```
<title> Title of Page </title>
```

<meta>

- This tag defines meta information about of the HTML document. It is useful for search engine optimization (SEO).
- This is defined inside the <head> tag.

```
<meta name="description" content="Tutorial page">
```

```
<meta name="keyword" content="C,Python,Java">
```

```
<meta name="author" content="DLSU CCS">
```

`name` is an attribute used to specify a name for the metadata.

<meta>

- This tag defines meta information about of the HTML document. It is useful for search engine optimization (SEO).
- This is defined inside the <head> tag.

```
<meta name="description" content="Tutorial page">
```

```
<meta name="keyword" content="C,Python,Java">
```

```
<meta name="author" content="DLSU CCS">
```

`content` is an attribute used to specify the value for the defined `name`.

<body>

- All of the content that renders on the browser page goes inside the <body> tag.

```
<html>
  ...
  <body>
    ...
  </body>
</html>
```

Headers <h1> to <h6>

Headers are useful for search engines to index the web application.

Numbers are arranged by **level of importance**, with **1** being the **highest** and **6** the **lowest**.

```
<h1> Hello! </h1>
```

```
<h2> Hello! </h2>
```

...

```
<h6> Hello! </h6>
```

Paragraphs <p>

Paragraphs are used to display blocks of texts.

```
<p> Hello there! </p>
```

```
<p> Welcome to the world of web development. </p>
```

Paragraphs <p>

The `align` attribute is **obsolete** in HTML5.

Some browsers might still continue to support it but avoid using it.

```
<p align="left"> Hello there! </p>
```

```
<p align="right">
```

```
<p align="center">
```

Avoid these! Styling should be done in CSS instead.

Try this:

Using only one `<p>` tag, display this:

Hello
World!

Line Break

Use
 for line breaks in a paragraph.

No need for a closing tag.

```
<p>  
Hello<br>  
World!  
</p>
```

NOTE

Simply using
 in *HTML5* is fine.

 (including the space) is conforming to *XHTML* which have stricter parsing rules.

Horizontal Rule <hr>

Use <hr> to divide paragraphs or sections with a horizontal rule.

```
<p> Chapter 1: Hello! </p>
```

```
<hr>
```

```
<p> Chapter 2: Goodbye! </p>
```

Preformatted Text <pre>

The <pre> tag is used to define a paragraph while preserving its format, such as spaces and line breaks.

```
<pre>
```

```
This is my first line.
```

```
This is my second line.
```

```
This is my third line with a lot of    spaces.
```

```
</pre>
```

Lists `` and ``

Unordered List ``

```
<ul>
```

```
<li> Apples </li>
```

```
<li> Oranges </li>
```

```
<li> Peaches </li>
```

```
</ul>
```

```
<ul type="disc|circle|square">
```

Ordered List ``

```
<ol>
```

```
<li> First </li>
```

```
<li> Two </li>
```

```
<li> Tres </li>
```

```
</ol>
```

```
<ol type="1|a|A|i|I"  
start="10" reversed>
```

Anchor<a>

An *anchor* needs the **href** attribute for it to be clickable. It creates a hyperlink to web pages, files, email addresses, and locations within the same page.

```
<a href="http://google.com/"> Click me </a>
```

The above example is an **absolute** link which includes the **domain of the website** including the protocol (http/https).

Anchor<a>

A **relative** link points to another **file** or a **file path**.



```
<a href="sample2.html"> Click me </a>
```

Anchor<a>

For internal linking, use #. Make sure to define an **id** attribute for the section in the page. When clicked, the page will scroll to that element.

```
<a id="top"> Top </a>
```

```
<a href="#top"> Back to Top </a>
```


Anchor<a>

An anchor may also have additional attribute to determine the behavior of that link.

```
<a href="http://google.com" target="_self"
  title="Google"> Click to search! </a>
```

target An anchor may also have additional attribute to determine the behavior of that link.

- `_self` opens in the same tab.
- `_blank` opens in a new tab.

Anchor<a>

An anchor may also have additional attribute to determine the behavior of that link.

```
<a href="http://google.com" target="_self"  
  title="Google"> Click to search! </a>
```

`title` is usually used to specify a tooltip for the link.

Division Container <div>

To separate content into logical sections, use **<div>**. It is a **block-level element** which will always **start on a new line** and takes up the full width available.

```
<div>  
  <p> Hello World! </p>  
</div>
```

NOTE

In HTML5, elements such as **<footer>**, **<nav>**, and **<header>**, have been created to make things contextual.

Span

 is also a container of HTML elements. It is an **inline element** which **does not start on a new line** and takes up only as much width as necessary.

```
<span>
```

```
  <p> Hello World! </p>
```

```
</span>
```

Tables <table>

<table> is used to define a table in an HTML document.

<table>	<th>	ID #	</th>	
<tr>		ID #	First Name	Last Number</tr>
<tr>		1	Juan	Dela Cruz</tr>
	<td>	1	</td>	
</table>				

Tables...<tr><th><td>

```
<table>
  <tr>
    <th> ID # </th>
    <th> First Name </th>
    <th> Last Name </th>
  </tr>
  <tr>
    <td> 1 </td>
    <td> Juan </td>
    <td> Dela Cruz </td>
  </tr>
</table>
```

Table contents are defined
per row:

<tr> Table Row

<th> Table Header

<td> Table Data

PS: Just like <p>, <table> styling attributes are deprecated in HTML5, and CSS should instead be used.

Tables... <caption>

A caption may be added to a table using the <caption> tag. It should be placed right after the opening <table> tag.

```
<table>
  <caption> Student List </caption>
  <tr>
    <th> ID # </th>
    <th> First Name </th>
    <th> Last Name </th>
  </tr>
  <tr>
    <td> 1 </td>
    <td> Juan </td>
    <td> Dela Cruz </td>
  </tr>
</table>
```

Tables... colspan and rowspan attributes

Merging Cells is also possible with the <table> element.

colspan specifies the number of columns occupied by the cell.

rowspan specifies the number of rows occupied by the cell

```
<table>
  <caption> Student List </caption>
  <tr>
    <th colspan="2"> First Name </th>
    <th> Last Name </th>
  </tr>
  <tr>
    <td rowspan="2"> 1 </td>
    <td> Juan </td>
    <td> Dela Cruz </td>
  </tr>
</table>
```


Image

 allows you to display an image on the page.

```
  

```

src is the source file.

alt is the alternative text.

width and **height** defines the dimensions of the image.

Forms <form>

Forms and inputs are used to interact with the user. This allows the page to be more **interactive** and **dynamic**.

```
<form>
```

```
  <input type="text" />
```

```
  <input type="password" />
```

```
</form>
```

Input<input>

<input> tag is used to define the input field.

```
<input type="text" id="fname" name="name" />
```

- **type** defines the kind of data accepted
- **id** is used as an identifier for a specific field
- **name** is the name of the field to be sent when the form is submitted

For more types and compatibility, you may refer to the documentation:

<https://developer.mozilla.org/en-US/docs/Web/HTML/Element/input>

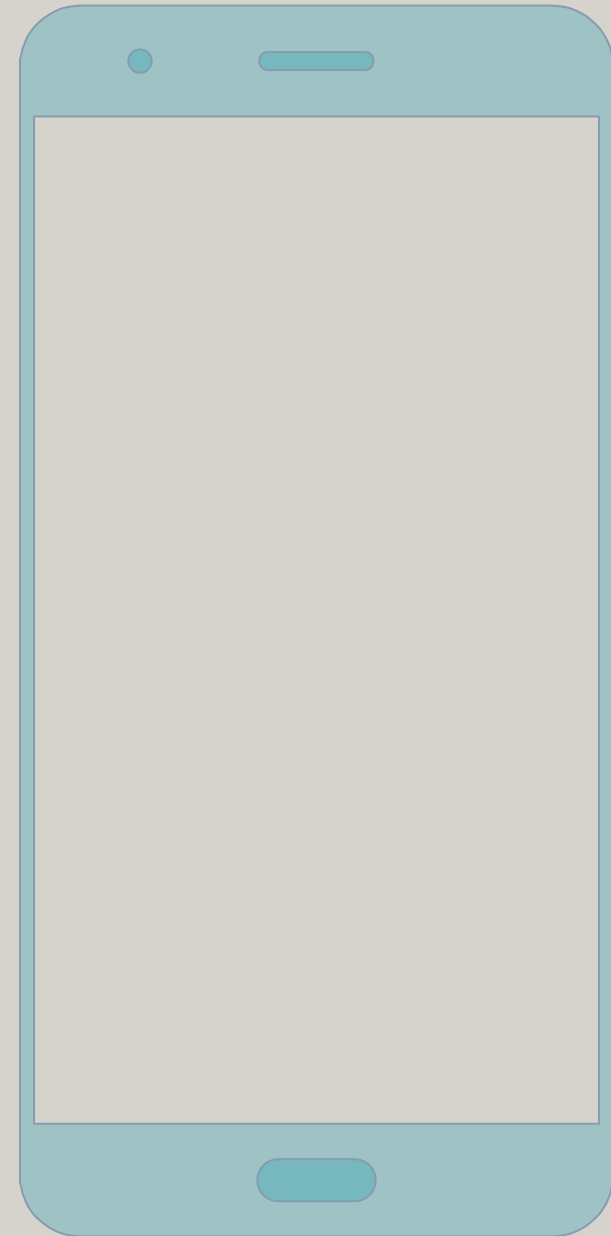
A run through of

mobile input types



Virtual Keyboards

One way to enhance user experience is to maximize the available functions on mobile devices.



Text

One-line text using the regular keyboard

```
<input type="text" />
```

Image from: <http://mobileinputtypes.com/>



Email

Email addresses with shortcut for @ and .com

```
<input type="email" />
```

Image from: <http://mobileinputtypes.com/>



Tel

Purely numeric

```
<input type="tel" />
```

Image from: <http://mobileinputtypes.com/>



Number

Numbers and symbols

```
<input type="number" />
```

Image from: <http://mobileinputtypes.com/>



Password

Automatic masking of input

```
<input type="password" />
```

Image from: <http://mobileinputtypes.com/>



Date

Provides month, day & year

```
<input type="date" />
```

Image from: <http://mobileinputtypes.com/>



Date & Time

Provides date, hour & min

```
<input type="datetime" />
```

Image from: <http://mobileinputtypes.com/>



Month

Provides month & year only

```
<input type="month" />
```

Image from: <http://mobileinputtypes.com/>

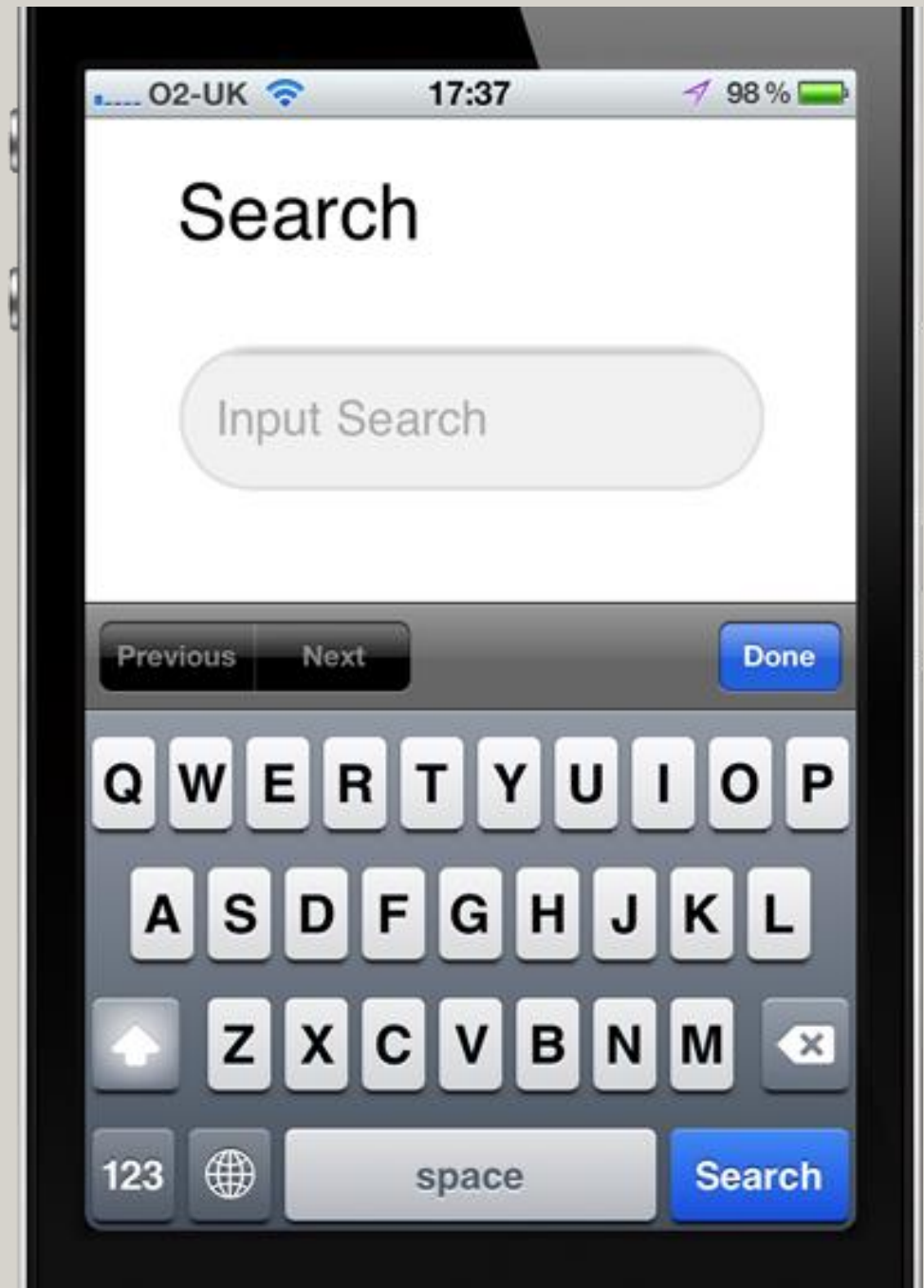


Search

Search button instead of Go

```
<input type="search" />
```

Image from: <http://mobileinputtypes.com/>



Input Choices

For multiple selection, use **checkbox**.

```
<form>  
  <input type="checkbox" value="yellow" />Yellow<br>  
  <input type="checkbox" value="black" checked />Black  
</form>
```

- **value** defines the value to be returned when the form is submitted while the box is checked
- **checked** sets the box to be checked by default

Input Choices

For single selection, use **radio**.

NOTE

`<label>` is not really required here, but it is highly recommended that it is used for best accessibility practices!

```
<form>
  <input type="radio" name="group1" value="female" id="f" />
  <label for="f">Female</label>
  <input type="radio" name="group1" value="male" id="m" />
  <label for="m">Male</label>
</form>
```

- `value` defines the value to be returned when the form is submitted while the radio button is selected.
- `name` defines the 'group' the radiobutton is in.

Input Choices

For dropdown boxes, use **select** with **option**.

```
<form>  
  <select>  
    <option value="a"> A </option>  
    <option value="b"> B </option>  
    <option value="c"> C </option>  
  </select>  
</form>
```

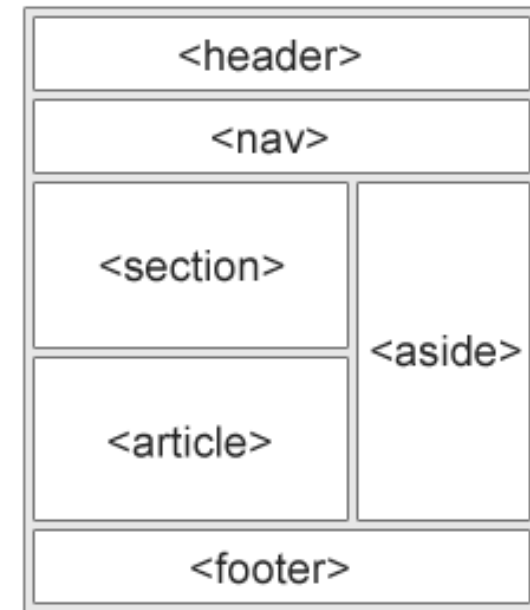
Form Submit

Defines the input field displayed as a button for submitting the contents of the <form>.

```
<input type="submit" value="Send" />
```

Semantic Elements

- HTML5 features semantic elements, to provide additional accessibility to HTML documents.
- It can be thought of as `<div>` and `` elements, but with intrinsic meaning.
- Examples:
 - `<nav>`
 - `<header>`
 - `<footer>`
 - `<section>`
 - `<aside>`
 - `<article>`



For each element's purpose and examples:

https://www.w3schools.com/html/html5_semantic_elements.asp

Media Files <video>

<video> allows video files to be embedded onto the webpage.

```
<video controls>  
  <source  
    src="awesome-video.mp4"  
    type="video/mp4"  
  />  
</video>
```

Media Files `<audio>`

`<audio>` allows audio files to be embedded onto the webpage.

```
<audio controls>
  <source
    src="awesome-song.mp3"
    type="audio/mp3"
  />
</audio>
```

Media Files

default “fallback” value

`<audio>` allows audio files to be embedded onto the webpage.

```
<audio>
  <source
    src="awesome-song.mp3"
    type="audio/mp3"
  />
  Your browser does not support the audio element.
</audio>
```

Exercise

Create a bio page about yourself.

- Add paragraphs
- Add links
- Add some images
- Insert media files
- Use divisions
- Try making use of semantic tags

Assignment

Create a bio page about yourself.

- Submit your work in Canvas
 - Zip your folder containing all your files
 - If your website contains multiple pages, name the main page as 'main.html'
 - Folder name: [Surname]_[Firstname]_HO1_HTML.zip

HTML

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