WISSAM HLAYHEL

HTML BASICS

HTML BASICS

- HTML and XHTML are the foundation of all web development.

- HTML is used as the graphical user interface in client-side programs. It is essentially plain text files, with the .html extension.

- HTML content is served statically or generated dynamically by server-side languages like PHP and Java.

- HTML was once a very loosely-defined language with very little standardization, but as it has become more important, the need for standards has become more apparent, so XHTML has been introduced.

- Some XHTML rules:
  - ➢ Use a doctype to describe the language (described below)
  - ➢ Write all code in lowercase letters. Encase all attribute values in double quotes
  - ➢ Each tag must have an ending tag, but a special case is allowed for non-content tags

HTML BASICS

- Fortunately HTML and XHTML are actually simpler than they used to be, because much of the functionality has moved to CSS

- Every page has a large HTML container and two major sub containers:
  - the head :head area contains information useful behind the scenes, such as CSS formatting instructions, JavaScript code , page title, document text encoding, page meta-data
  - the body : The body contains the part of the page that is visible to the user

- HTML page contains HTML elements, defined using a TAG construct
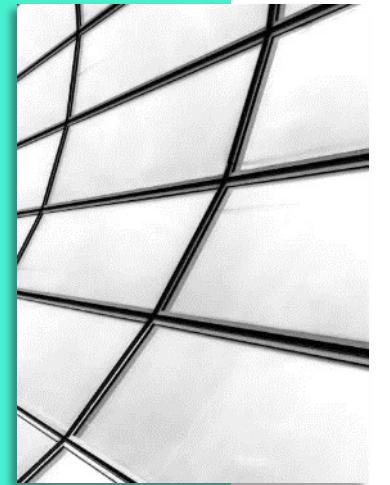
TAGS AND ATTRIBUTES

- An HTML document is based on the notion of tags. A tag is a piece of text inside angle brackets (<>).

- Tags typically have a beginning and an end, and usually contain some sort of text/sub-elements inside them.

- For example, a paragraph is normally denoted like this:

```
<p>
This is a simple paragraph
</p>
```

- Tags without sub-elements can be abbreviated to simpler notation :

```
<br/>
```

TAGS AND ATTRIBUTES

- The <p> indicates the beginning of a paragraph. Text is then placed inside the tag, and the end of the paragraph is denoted by an end tag, which is similar to the start tag but with a slash (</p>.) It is common to indent content in a multi-line tag, but it is also legal to place tags on the same line:

    ```
    <p> This is a simple paragraph </p>
    ```

- Tags are sometimes enhanced by attributes, which are name value pairs that modify the tag. For example, the tag (used to embed an image into a page) usually includes the following attributes:

    ```
    <img src = "logo.jpg" Alt = "this is logo" />
    ```

    o   The src attribute describes where the image file can be found, and the alt attribute describes alternate text that is displayed if the image is unavailable.

NESTED TAGS

- Tags can be (and frequently are) nested inside each other.

  ```
  <a><b></b></a>
  ```

  or

  ```
  <article>
      <h1>Article Title</h1>
      <p>This is the content of the article.</p>
  </article>
  ```

- Tags cannot overlap, so :

  ```
  <a><b></a></b>
  ```
  o   is not legal

PAGE STRUCTURE ELEMENTS

- The following elements are part of every web page:

```
<html>
   <head>
      <title></title>
   </head>
   <body>
   </body>
</html>
```

Element	Description
<html></html>	Surrounds the entire page
<head></head>	Contains header information (metadata, CSS styles, JavaScript code)
<title></title>	Holds the page title normally displayed in the title bar and used in search results
<body></body>	Contains the main body text. All parts of the page normally visible are in the body

KEY STRUCTURAL ELEMENTS

• Most pages contain the following key structural elements:

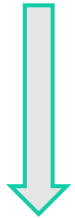| Element	Name	Description
	Heading 1	Reserved for strongest emphasis
	Heading 2	Secondary level heading. Headings go down to level 6, but <h1> through <h3> are most common
	Paragraph	Most of the body of a page should be enclosed in paragraphs
	Division	Similar to a paragraph, but normally marks a section of a page. Divs usually contain paragraphs

LISTS AND DATA

Web pages frequently incorporate structured data using HTML list and table tag

Element	Name	Description
	Unordered list	Normally these lists feature bullets (but that can be changed with CSS)
	Ordered list	These usually are numbered, but this can be changed with CSS
	List item	Used to describe a list item in an unordered list or an ordered list
<table></table>	Table	Defines beginning and end of a table
<tr></tr>	Table row	Defines a table row. A table normally consists of several <tr> pairs (one per row)
<td></td>	Table data	Indicates data in a table cell. <td> tags occur within <tr> (which occur within <table>)
<th></th>	Table heading	Indicates a table cell to be treated as a heading with special formatting

LIST TYPES AND NESTING EXAMPLES

```
<ol>
   <li>one</li>
   <li>two</li>
   <li>three</li>
</ol>
```

1. one
2. two
3. three

```
<ul>
      <li>English
         <ol>
            <li>One
            <li>Two
            <li>Three
         </ol>
      </li>
      <li>French
         <ol>
            <li>un
            <li>deux
            <li>trois
         </ol>
      </li>
</ul>
```

- English
   1. One
   2. Two
   3. Three
- French
   1. un
   2. deux
   3. trois

USE OF TABLES

- A table consists of a series of table rows (tr.) Each table row consists of a number of table data (td) elements. The table (th) element can be used to define table cells as heading.

- rowspan and colspan attributes are used to make a cell span more than one row/column.

- Each row of a table should have the same number of columns, and each column should have the same number of rows.

```html
<table border="1">
    <tr>
        <th>English</th>
        <th>French</th>
    </tr>
    <tr>
        <td>One</td>
        <td>Un</td>
    </tr>
    <tr>
        <td>Two</td>
        <td>Deux</td>
    </tr>
</table>
```

English	French
One	Un
Two	Deux

LINKS AND IMAGES

- Links and images are both used to incorporate external resources into a page. Both are reliant on URIs (Universal Resource Indicators), commonly referred to as URLs or addresses.

- **<a>** (anchor) - The anchor tag is used to provide the basic web link:

```
<a href = "http://www.example.com">link to example.com</a>
```

- In this example, http://www.example.com is the site to be visited. The text "link to example.com" will be highlighted as a link.

- **<link>** - The link tag is used primarily to pull in external CSS files:

```
<link rel = "stylesheet" type = "text/css" href = "style.css" />
```

- **<img>** - The img tag is used in to attach an image. Valid formats are .jpg, .png, and .gif. An image should always be accompanied by an alt attribute describing the contents of the image.

```
<img src=".../images/logo.png" alt = "me before shaving" />
```

SPECIALTY MARKUP

- HTML / XHTML includes several specialty tags. These are used to describe special purpose text. They have default styling, but of course the styles can be modified with CSS

  - **<blockquote>:** define a block of text that is a quotation from another source.
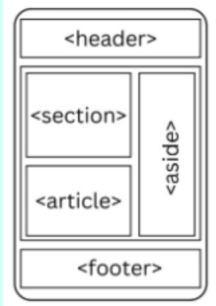
  - **<pre>:** displayed content in a fixed-width font (usually a monospaced or "typewriter" font), and preserves both spaces and line breaks.

  - **<code>:** used to manage pre-formatted text, especially code listings (like <pre>)

  - **<span>:** used when you want to apply styles or behavior to a specific portion of text within a larger block of content (like a part of <p> element).

  - **<em>:** emphasized text by italicizing it.

  - **<strong>:** emphasized text by making it in bold

FORMS

- Forms are the standard user input mechanism in HTML / XHTML. You will need another language like JavaScript or PHP to read the contents of the form elements and act upon them

```
<form action="">
     <fieldset>
          <legend>My form</legend>
          <label for="txtName">Name</label>
          <input type="text" id="txtName" />
          <button type="button" Onclick="myFunction()">
               Click Me
          </button>
     </fieldset>
</form>
```
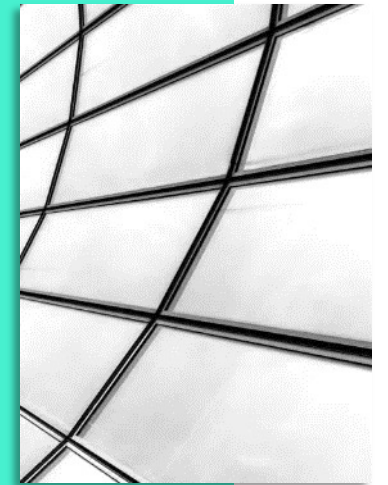
```
┌─My form─────────────────────────────────────┐
│  Name [                    ] [ Click Me ]    │
│                                              │
└──────────────────────────────────────────────┘
```

- Many input types can be selected : checkbox, hidden, password, radio,…

- Form handling requires a server-side programming language like php/python..

HTML ENTITIES

- Special characters in HTML are encoded with special entities that begin with the ampersand(&) followed by a code and a semicolon:

Character	Name	Code	Note
space	Non-breaking space		Adds white space
<	Less than	<	Used to display HTML code or mathematics
>	Greater than	>	Used to display HTML code or mathematics
&	Ampersand	&	If you're not displaying an entity but really want the & symbol
©	Copyright	©	Copyright symbol

HTML5

NEW FEATURES

HTML5 NEW FEATURES

Semantics Elements

Audio and Video Support

Canvas Elements

Geolocation API

Local Storage

Web Workers

Drag and Drop API

Form Enhancements

HTML5 - SEMANTICS ELEMENTS

```html
<body>
    <header>
        <div class="logo">
            <img src="logo.png" alt="…">
        </div>
    </header>

    <nav>
        <ul>
            <li><a href="#">Home</a></li>
            <li><a href="#">Products</a></li>
        </ul>
    </nav>

    <section>
        <p>It is a paragraph</p>
    </section>

    <article>

    </article>

    <footer>
        &copy My website | 2023
    </footer>

</body>
```
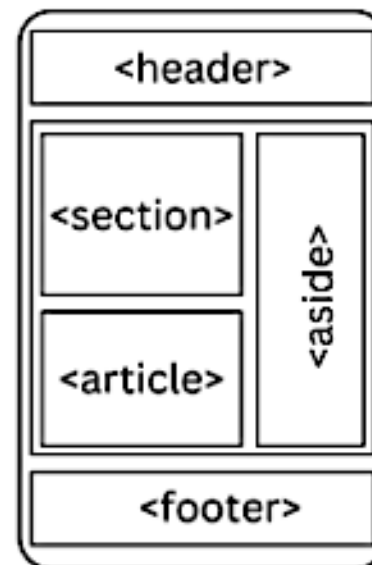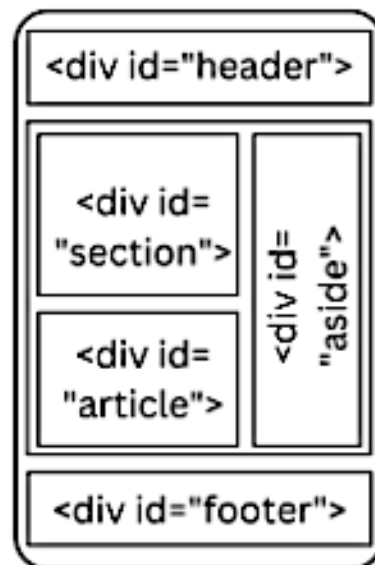
HTML5 - AUDIO AND VIDEO SUPPORT

```html
<!-- Code to setup video -->

<video width="300" height="200" controls autoplay>
    <source src="./dog.mp4" type="video/mp4" />
</video>


<!-- Code to setup audio -->

<audio controls>
    <source src="dog.mp3" type="audio/mp3">
</audio>
```
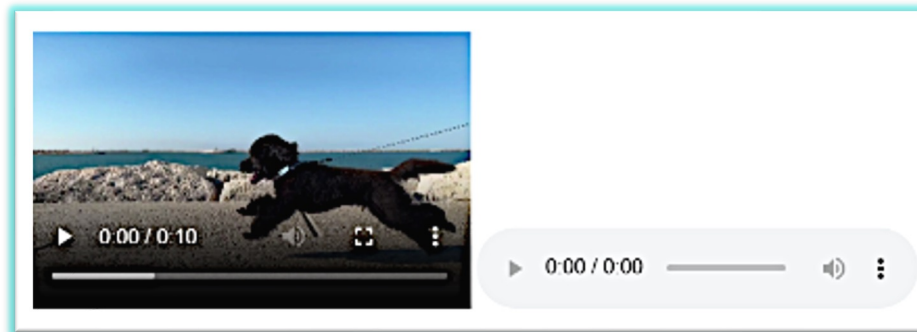
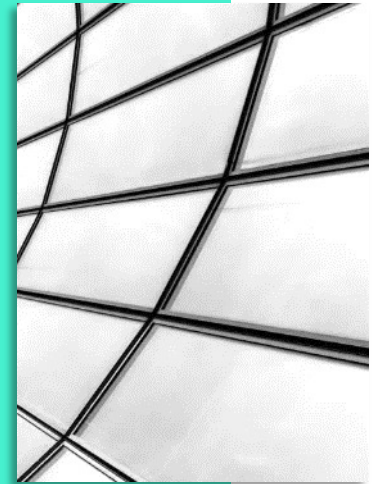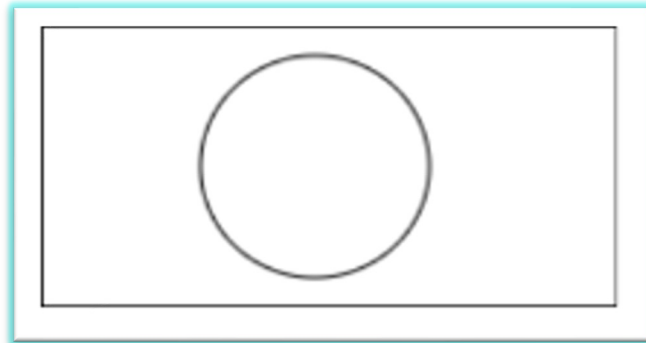# HTML5 - CANVAS ELEMENT

```
<body>
    <canvas id="Canvas" width="200" height="100" style="border:1px solid #000000;">
    </canvas>
</body>
<script>
    var c = document.getElementById("Canvas");
    var ctx = c.getContext("2d");
    ctx.beginPath();
    ctx.arc(95, 50, 40, 0, 2 * Math.PI);
    ctx.stroke();
</script>
```

HTML5 - FORM ENHANCEMENTS

```html
<form>

  <label for="fullName">Full Name:</label>
  <input type="text" id="fullName"
         name="fullName" required>
  <label for="email">Email:</label>
  <input type="email" id="email" name="email"
         required>
  <label for="website">Website (URL):</label>
  <input type="url" id="website"
         name="website"
         placeholder="https://example.com"
         required>
  <label for="age">Age:</label>
  <input type="number" id="age" name="age"
         min="18" required>
  <label for="message">Message:</label>
  <textarea id="message" name="message"
         rows="4" placeholder="Enter your
         message here..." required>
  </textarea>
  <button type="submit">Submit</button>

</form>
```

Email:

Website (URL):

https://example.com

Age:

23

Message:

Enter your message here...

Submit

THE END

Wissam H.