Introduction to Hypertext Markup Language (HTML)

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What is HTML?

- HTML defines the structure of a web page
- It is a hierarchical collection of elements
- It is **NOT** a programming language

```html
<!DOCTYPE html>
<html>
  <head>
    <title> CSC 210 </title>
  </head>
  <body>
    <h1> Welcome to CSC 210! </h1>
  </body>
</html>
```
The first line of an HTML document declares the document type. Prior to HTML 5 this provided the version of HTML used in the document. There is only one document declaration tag for HTML 5 and it must be the first line of the document.

<!DOCTYPE html>
Elements in HTML are made up of opening and closing tags and everything between.

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

- **Opening Tag** - `<p>`
- **Content** - Hello World!
- **Closing Tag** - `</p>`
Self-Closing Elements

Some elements do not require a closing tag. These elements consist only of an opening Tag.

- `<br/>`
- `<img src="smile.png" alt="smile"/>`
The root element of every HTML document must be a type HTML element.

<html> . . . </html>
Element Nesting

Elements can be placed inside other elements.

```html
<!DOCTYPE html>
<html>
  <head>
    <title> CSC 210 </title>
  </head>
  <body>
    <h1> Welcome to CSC 210! </h1>
  </body>
</html>
```
## Basic HTML Elements

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;html&gt;</code></td>
<td>root element of all HTML documents</td>
</tr>
<tr>
<td><code>&lt;head&gt;</code></td>
<td>metadata and external CSS/Javascript links</td>
</tr>
<tr>
<td><code>&lt;title&gt;</code></td>
<td>document title</td>
</tr>
<tr>
<td><code>&lt;body&gt;</code></td>
<td>contains all visible page content</td>
</tr>
<tr>
<td><code>&lt;h1&gt;</code> ... <code>&lt;h6&gt;</code></td>
<td>headers</td>
</tr>
<tr>
<td><code>&lt;p&gt;</code></td>
<td>paragraph element</td>
</tr>
<tr>
<td><code>&lt;br/&gt;</code></td>
<td>defines line break</td>
</tr>
<tr>
<td><code>&lt;div&gt;</code></td>
<td>defines a major document section</td>
</tr>
<tr>
<td><code>&lt;span&gt;</code></td>
<td>defines a minor document section</td>
</tr>
<tr>
<td><code>&lt;img/&gt;</code></td>
<td>defines an image</td>
</tr>
</tbody>
</table>
List Elements

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;ul&gt;</td>
<td>unordered list</td>
</tr>
<tr>
<td>&lt;ol&gt;</td>
<td>ordered list</td>
</tr>
<tr>
<td>&lt;li&gt;</td>
<td>list item</td>
</tr>
</tbody>
</table>

- Tea
- Coffee

- Open Book
- Read
<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;table&gt;</code></td>
<td>table</td>
</tr>
<tr>
<td><code>&lt;tr&gt;</code></td>
<td>row in a table</td>
</tr>
<tr>
<td><code>&lt;th&gt;</code></td>
<td>header element in a row</td>
</tr>
<tr>
<td><code>&lt;td&gt;</code></td>
<td>data element in a row</td>
</tr>
</tbody>
</table>
Table Example

<table>
  <tr>
    <th> Element </th>
    <th> Description </th>
  </tr>
  <tr>
    <td> &lt;table&gt; </td>
    <td> table </td>
  </tr>
  <tr>
    <td> &lt;tr&gt; </td>
    <td> row in a table </td>
  </tr>
  . . .
</table>
Attributes provide extra often non-displayed information
They are included inside the element’s opening tag

```html
<p class="authors-note"> We will see these later </p>

<a href="http://cs.rochester.edu" title="URCS"> URCS </a>
```
HTML Comments

<p> I am not a comment and will appear on the page </p>

<!-- <p> I am a comment and will not appear </p> -->
W3C. Html 5.2.

W3C. Html validator.

w3schools. Html forms.
w3schools.  
Html lists.  

w3schools.  
Html tables.  

w3schools.  
Html5 introduction.  
https://www.w3schools.com/html/html5_intro.asp.  