Java EE Web Development

Lesson 1 - HTML

What is HTML?

- HTML stands for Hyper Text Markup Language
- HTML is the standard markup language for creating Web pages
- HTML describes the structure of a Web page
- HTML consists of a series of elements
- HTML elements tell the browser how to display the content
- HTML elements label pieces of content such as "this is a heading", "this is a paragraph", "this is a link", etc.

```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>

<h1>This is a Heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

Example Explained

- The `<!DOCTYPE html>` declaration defines that this document is an HTML5 document
- The `<html>` element is the root element of an HTML page
- The `<head>` element contains meta information about the HTML page
- The `<title>` element specifies a title for the HTML page (which is shown in the browser's title bar or in the page's tab)
- The `<body>` element defines the document's body, and is a container for all the visible contents, such as headings, paragraphs, images, hyperlinks, tables, lists, etc.
- The `<h1>` element defines a large heading
- The `<p>` element defines a paragraph

What is an HTML Element?

An HTML element is defined by a start tag, some content, and an end tag:

`<tagname>`Content goes here...`</tagname>`

The HTML element is everything from the start tag to the end tag:

`<h1>`My First Heading`</h1>`

`<p>`My first paragraph.`</p>`

HTML Page Structure

Below is a visualization of an HTML page structure:

```
<html>
    <head>
        <title>Page title</title>
    </head>
    <body>
        <h1>This is a heading</h1>
        <p>This is a paragraph.</p>
        <p>This is another paragraph.</p>
    </body>
</html>
```

HTML Attributes

- All HTML elements can have attributes
- Attributes provide additional information about elements
- Attributes are always specified in the start tag
- Attributes usually come in name/value pairs like: name="value"

`<a href="https://devz.lk">Visit Devz</a>`

`<img src="sri_lanka.jpg">`

`<img src="img_girl.jpg" width="500" height="600">`

```
<img src="img_girl.jpg" alt="Girl with a jacket">
<p style="color:red;">This is a red paragraph.</p>
```

HTML Headings

HTML headings are defined with the `<h1>` to `<h6>` tags.

`<h1>` defines the most important heading. `<h6>` defines the least important heading:

```
<h1>This is heading 1</h1>
<h2>This is heading 2</h2>
<h3>This is heading 3</h3>
<h4>This is heading 4</h4>
<h5>This is heading 5</h5>
<h6>This is heading 6</h6>
```

HTML Paragraphs

HTML paragraphs are defined with the `<p>` tag:

```
<p>This is a paragraph.</p>
<p>This is another paragraph.</p>
```

HTML Horizontal Rules

```
<h1>This is heading 1</h1>
<p>This is some text.</p>
<hr>
<h2>This is heading 2</h2>
<p>This is some other text.</p>
<hr>
```

HTML Line Breaks

```
<p>This is<br>a paragraph<br>with line breaks.</p>
```

HTML <pre> Element

The HTML `<pre>` element defines preformatted text.

```
<pre>
  My Bonnie lies over the ocean.

  My Bonnie lies over the sea.

  My Bonnie lies over the ocean.

  Oh, bring back my Bonnie to me.
</pre>
```

HTML Text Formatting

Formatting elements were designed to display special types of text:

- `<b>` - Bold text
- `<strong>` - Important text
- `<i>` - Italic text
- `<em>` - Emphasized text
- `<mark>` - Marked text
- `<small>` - Smaller text
- `<del>` - Deleted text
- `<ins>` - Inserted text
- `<sub>` - Subscript text
- `<sup>` - Superscript text

HTML Comments

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

<!--

<p>Look at this cool image:</p>

<img border="0" src="pic_trulli.jpg" alt="Trulli">
```

```
-->
```
```
<p>This is a paragraph too.</p>
```
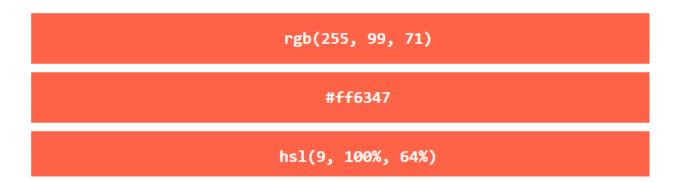
HTML Colors

Color Values

In HTML, colors can also be specified using RGB values, HEX values, HSL values, RGBA values, and HSLA values.

The following three <div> elements have their background color set with RGB, HEX, and HSL values:

```
<h1 style="color:Tomato;">Hello World</h1>
```

<div style="background:#FF6347;color:white;text-align:center;padding:30px;">rgb(255, 99, 71)</div>

<div style="background:#FF6347;color:white;text-align:center;padding:30px;">#ff6347</div>

<div style="background:#FF6347;color:white;text-align:center;padding:30px;">hsl(9, 100%, 64%)</div>

HTML RGB

In HTML, a color can be specified as an RGB value, using this formula:

rgb(*red, green, blue*)

rgb(255, 0, 0)

rgb(0, 0, 255)

rgb(60, 179, 113)

rgb(238, 130, 238)

rgb(255, 165, 0)

rgb(106, 90, 205)

HTML Links

```
<a href="url">link text</a>
```

HTML Links - Use an Image as a Link

```
<a href="NewServlet">
<img src="smiley.gif" alt="HTML tutorial"
style="width:42px;height:42px;">
</a>
```

HTML Images

```
<img src="img_chania.jpg" alt="Flowers in Chania">
<img src="img_girl.jpg" alt="Girl in a jacket"
style="width:500px;height:600px;">
<img src="img_girl.jpg" alt="Girl in a jacket" width="500"
height="600">
<img src="/images/html5.gif" alt="HTML5 Icon"
style="width:128px;height:128px;">
```

HTML Favicon

```
<head>
  <title>My Page Title</title>
  <link rel="icon" type="image/x-icon" href="/images/favicon.ico">
</head>
```

HTML Tables

```html
<table>
  <tr>
    <th>Company</th>
    <th>Contact</th>
    <th>Country</th>
  </tr>
  <tr>
    <td>Alfreds Futterkiste</td>
    <td>Maria Anders</td>
    <td>Germany</td>
  </tr>
  <tr>
    <td>Centro comercial Moctezuma</td>
    <td>Francisco Chang</td>
    <td>Mexico</td>
  </tr>
</table>
```

HTML Lists

Unordered HTML List

```html
<ul>
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
</ul>
```

Ordered HTML List

```html
<ol>
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
</ol>
```

HTML Description Lists

```
<dl>
  <dt>Coffee</dt>
  <dd>- black hot drink</dd>
  <dt>Milk</dt>
  <dd>- white cold drink</dd>
</dl>
```

HTML Forms

<form> Element

```
<form>
.
form elements
.
</form>
```

<input> Element

<input type="text">	Displays a single-line text input field
<input type="radio">	Displays a radio button (for selecting one of many choices)
<input type="checkbox">	Displays a checkbox (for selecting zero or more of many choices)

`<input type="submit">`   Displays a submit button (for submitting the form)

`<input type="button">`   Displays a clickable button

```
<form>
  <label for="fname">First name:</label><br>
  <input type="text" id="fname" name="fname"><br>
  <label for="lname">Last name:</label><br>
  <input type="text" id="lname" name="lname">
</form>
```

```
<form>
  <input type="radio" id="html" name="fav_language" value="HTML">
  <label for="html">HTML</label><br>
  <input type="radio" id="css" name="fav_language" value="CSS">
  <label for="css">CSS</label><br>
  <input type="radio" id="javascript" name="fav_language"
value="JavaScript">
  <label for="javascript">JavaScript</label>
</form>
```