

# INTRODUCTION TO HYPERTEXT MARKUP LANGUAGE (HTML)

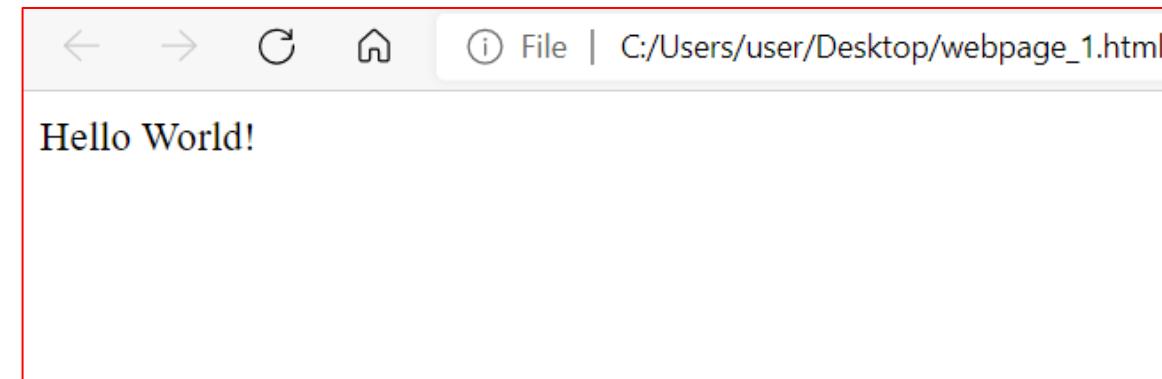
ECC 811– SOFTWARE ENGINEERING

Wednesday, July 9, 2025

# BASIC HTML DOCUMENT

1. At the Windows <prompt> start Notepad
2. Enter the text shown below:

```
<html lang="en">
<head>
  <title>A simple HTML document</title>
</head>
<body>
  <p>Hello World!</p>
</body>
</html>
```



3. Save the file as “**Webpage\_1.html**” on the desktop
4. Go to the Desktop and double click on the file **Webpage\_1.html**

# HTML TAGS

1. HTML tags are like keywords which defines that how web browser will format and display the content. With the help of tags, a web browser can distinguish between an HTML content and a simple content.
2. HTML tags contain three main parts:
  - a) opening tag `<x>`
  - b) Content
  - c) closing tag `</x>` where X is one of the many standard tags
3. But some HTML tags are unclosed tags.
4. When a web browser reads an HTML document, browser reads it from top to bottom and left to right.
5. HTML tags are used to create HTML documents and render their properties. Each HTML tags have different properties.

# PROPERTIES OF HTML TAGS

HTML tags have the following properties:

1. All HTML tags must be enclosed within <> brackets.
2. Every tag in HTML perform different tasks.
3. If you have used an open tag <tag>, then you must use a close tag </tag> (except some special tags)

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>A simple HTML document</title>
</head>
<body>
  <p>Hello World!</p>
</body>
</html>
```

# CREATING A WEB PAGE WITH ALL THE REQUIRED TAGS/1

1. Open the file **Webpage\_1.html** in Notepad and replace the words **Hello World** with the text shown below.

```
<h1>Understanding Client/Server Architecture </h1>
<p>To be successful in Web development, you need to understand the
basics of client/server architecture. There are many definitions of the
terms <i>client</i> and <i>server</i>.

In traditional client/server architecture, the <b>server</b> is usually
some sort of database from which a client requests information.

<p> from <i>JavaScript 5th Edition</i> <br>
by <b> John Kamau Wataka </b>
```

2. Save the file by clicking on **save**

# CREATING A WEB PAGE WITH ALL THE REQUIRED TAGS /2



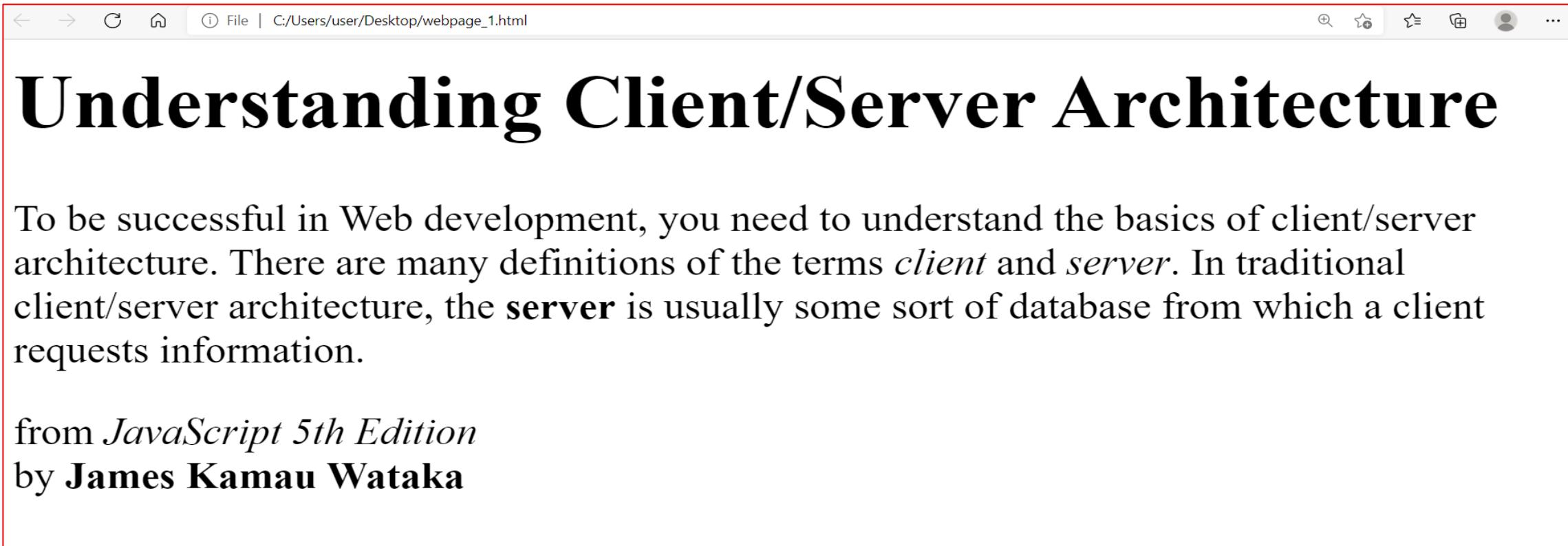
\*webpage\_1 - Notepad

File Edit Format View Help

```
<html lang="en">
<head>
  <title>A simple HTML document</title>
</head>
<body>
<h1>Understanding Client/Server Architecture </h1>
<p>To be successful in Web development,
you need to understand the basics of client/server architecture.
There are many definitions of the terms
<i>client</i> and <i>server</i>.
  In traditional client/server architecture, the
<b>server</b> is usually some sort of database from which a client requests information.
<p>from <i>JavaScript 5th Edition</i><br>
by <b> James Kamau Wataka
</body>
</html>
```

# CREATING A WEB PAGE WITH ALL THE REQUIRED TAGS /3

- Go to the directory where the file is saved and double click on it to open it in the web-browser.



The image shows a screenshot of a web browser window. The title bar at the top has icons for back, forward, refresh, and search, followed by the text 'File | C:/Users/user/Desktop/webpage\_1.html'. The main content area displays a large, bold, black title: 'Understanding Client/Server Architecture'. Below the title, there is a block of text in a smaller black font. The entire browser window is enclosed in a red border.

**Understanding Client/Server Architecture**

To be successful in Web development, you need to understand the basics of client/server architecture. There are many definitions of the terms *client* and *server*. In traditional client/server architecture, the **server** is usually some sort of database from which a client requests information.

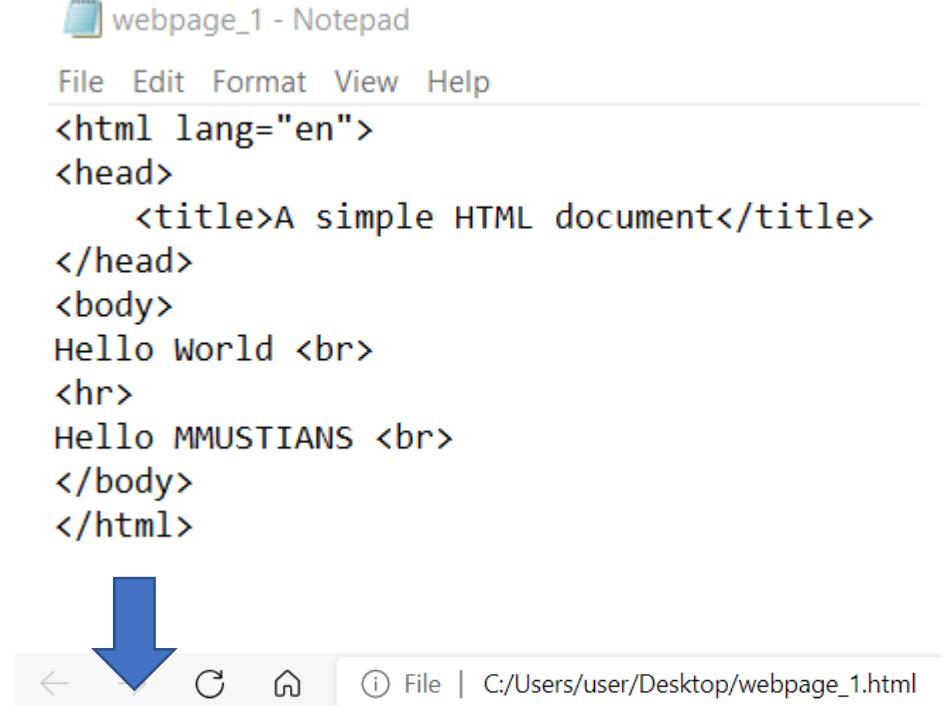
from *JavaScript 5th Edition*  
by **James Kamau Wataka**

# TYPES OF HTML TAGS: UNCLOSED HTML TAGS

Some HTML tags are not closed, for example br and hr.

**<br> Tag:** br stands for break line, it breaks the line of the code.

**<hr> Tag:** hr stands for Horizontal Rule. This tag is used to put a line across the webpage.



webpage\_1 - Notepad

File Edit Format View Help

```
<html lang="en">
<head>
    <title>A simple HTML document</title>
</head>
<body>
Hello World <br>
<hr>
Hello MMUSTIANS <br>
</body>
</html>
```

A screenshot of a Notepad window titled "webpage\_1 - Notepad". The menu bar includes "File", "Edit", "Format", "View", and "Help". The code in the editor shows an HTML document with unclosed tags: <br> and <hr>. A blue arrow points from the text "Hello MMUSTIANS" in the code to the rendered output below.

Hello World

Hello MMUSTIANS

# TYPES OF HTML TAGS: META TAGS

1. **<meta> tag** defines metadata about an HTML document. Metadata is data (information) about data.
2. **<meta>** tags always go inside the **<head>** element, and are typically used to specify character set, page description, keywords, author of the document, and viewport settings.
3. HTML Meta Tags are as follows:
  - DOCTYPE,
  - title,
  - link,
  - Meta
  - style

# TYPES OF HTML TAGS: TEXT TAGS

1. **<text> tag** is used to define the single-line text field on a web page.
2. HTML Text Tags are as follows:
  - **<p>** → defines a paragraph of text.
  - **<h1>, <h2>, <h3>, <h4>, <h5>, <h6>** → defines heading text.
  - **<strong>** → defines a strong/important text (BOLD)
  - **<em>, <abbr>, <acronym>, <address>, <bdo>**
  - **<blockquote>, <cite>**
  - **<q>, <code>**
  - **<ins>, <del>**
  - **<dfn>, <kbd>, <pre>**
  - **<samp> <var>**
  - **<br>** → defines a line break (Go to next line)

# TYPES OF HTML TAGS: LINK TAGS

1. `<link>` tag defines the relationship between the current document and an external resource.
2. `<link>` tag is most often used to link to external style ...
3. HTML Link Tags are as follows:
  - `<a>` defines a hyperlink, which is used to link from one page to another. The most important attribute of the `<a>` element is the `href` attribute, .
  - `<base>` specifies the base URL and/or target for all relative URLs in a document. The `<base>` tag must have either an `href` or a `target` attribute present.

# EXAMPLES OF USE OF LINK TAG

```
<head>
  <link rel="stylesheet" href="styles.css">
</head>
```

```
<a href="https://www.ece422.elimu.net"> Visit Course Website</a>
```

# TYPES OF HTML TAGS: IMAGE TAGS

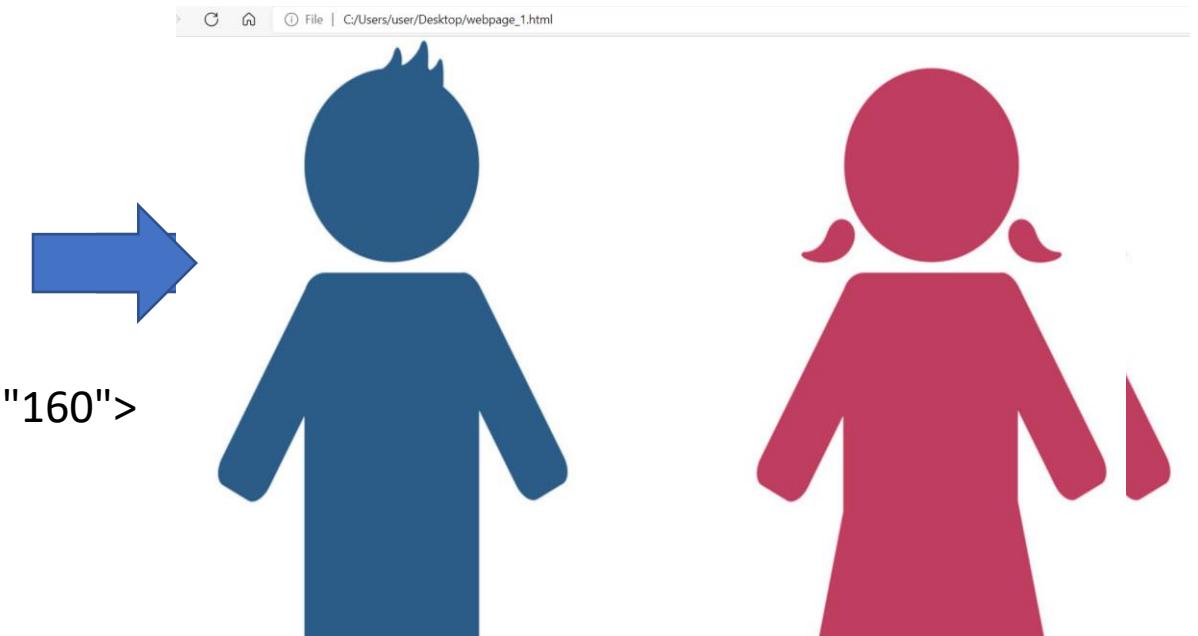
HTML Image and Object Tags are as follows:

- **<img>** is used to embed an image in an HTML page. Images are not technically inserted into a web page; images are linked to web pages.
- **<map>** used to define an image map. An image map is an image with clickable areas.
- **<area>** defines an area inside an image map (an image map is an image with clickable areas).
- **<object>** defines a container for an external resource. The external resource can be a web page, a picture, a media player, or a plug-in application.
- **<param>** used to define parameters for an **<object>** element.

# EXAMPLE - IMAGE TAGS

```
<html lang="en">
<head>
  <title>A simple HTML List </title>
</head>
<body>

</body>
</html>
```



# EXAMPLE - MAP TAG

```
<html lang="en">
<head>
  <title>A simple HTML Map Tag </title>
</head>
<body>
<h1>The map and area elements</h1>
<p>Click on Boy or Girl to go to a new page and read more about the topic:</p>

<map name="workmap">
  <area shape="rect" coords="0,0,200,400" alt="Boys" href="boys.htm">
  <area shape="rect" coords="200,0,400,400" alt="Girls" href="girls.htm">
</map>
</body>
</html>
```

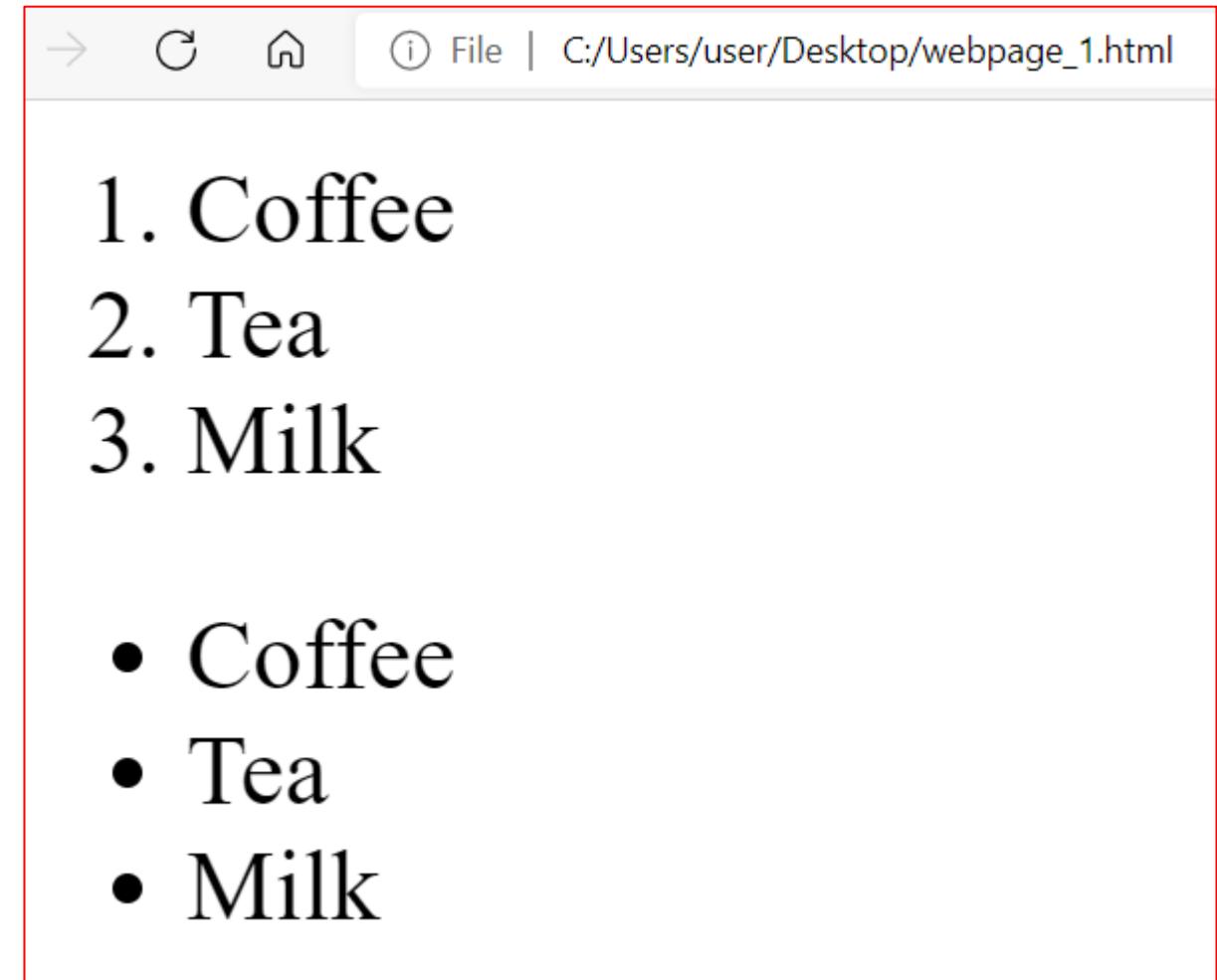
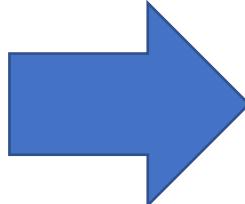
# TYPES OF HTML TAGS: LIST TAGS

1. **<li> tag** defines a list item. The **<li>** tag is used inside ordered lists(**<ol>**), unordered lists (**<ul>**), and in menu lists (**<menu>**).
2. In **<ul>** and **<menu>**, the list items will usually be displayed with bullet points.
3. HTML List Tags are as follows:
  - **<ul>**    **←-- Unordered List** can be numerical or alphabetica
  - **<ol>**    **←-- Ordered List** can be numerical or alphabetica
  - **<li>**    **←----list item**
  - **<dl>**    **←-- description list**
  - **<dt>**    **←-- defines a term/name in a description list**
  - **<dd>**

# EXAMPLE: LIST TAGS

```
<html lang="en">
<head>
  <title>A simple HTML List </title>
</head>
<body>
<ol>
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
</ol>

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



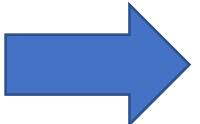
# TYPES OF HTML TAGS: TABLE TAGS

HTML Table Tags are as follows:

- **Table** - It is used to present data in tabular form or to create a table within HTML document.
- **tr** - defines the row cells in an HTML table
- **Td** - used to define cells of an HTML table which contains table data
- **Th** - defines the head cell of an HTML table.
- **Tbody** - It represents the body content of an HTML table and used along with **<thead>** and **<tfoot>**.
- **thead** - defines the header of an HTML table. It is used along with **<tbody>** and **<tfoot>** tags.
- **Tfoot** - defines the footer content of an HTML table.
- **Col** - defines a column within a table which represent common properties of columns and used with the **<colgroup>** element.
- **Colgroup** - used to define group of columns in a table.
- **Caption** - used to define a caption for a table.

# EXAMPLE : TABLE TAGS

```
<html lang="en">
<head>
  <title>A simple HTML Table </title>
</head>
<body>
<table style="width:100%">
  <tr>
    <th>Firstname</th>
    <th>Lastname</th>
    <th>Age</th>
  </tr>
  <tr>
    <td>Jill</td>
    <td>Smith</td>
    <td>50</td>
  </tr>
  <tr>
    <td>Eve</td>
    <td>Jackson</td>
    <td>94</td>
  </tr>
</table>
</body>
</html>
```



Firstname	Lastname	Age
Jill	Smith	50
Eve	Jackson	94

# TYPES OF HTML TAGS: SCRIPTING TAGS

HTML Scripting Tags are as follows:

- <Script> Tag is used to declare the JavaScript within HTML document.
- <Noscript> is used to define an alternate content to be displayed to users that have disabled scripts in their browser or have a browser that doesn't support .

# USING SCRIPT TAG

1. The `<script>` tag is used to embed a client-side script (JavaScript).
2. The `<script>` element either contains scripting statements, or it points to an external script file through the `src` attribute.
3. Common uses for JavaScript are :
  - a) image manipulation
  - b) form validation
  - c) dynamic changes of content.
4. Example

```
<script>
document.getElementById("demo").innerHTML = "Hello JavaScript!";
</script>
```

# TRANSITIONAL DOCUMENT TYPE DEFINITION (DTD)

1. HTML 4 includes mechanisms for style sheets, scripting, embedding objects, improved support for right to left and mixed direction text, and enhancements to forms for improved accessibility for people with disabilities.
2. Transitional Document Type Definition (DTD) includes presentation attributes and elements that W3C expects to phase out as support for style sheets matures.

# EXAMPLE USING TRANSITIONAL DOCUMENT TYPE

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0  
Transitional//EN"
```

```
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-  
transitional.dtd">
```

```
<html>
```

```
<head>
```

```
<title> Great American Novel </title>
```

```
</head>
```

```
<body>
```

```
<p> It was a <s>dark and stormy night</s>
```

```
<u>bright and sunny day</u>
```

```
<s> Lightning streaked the sky, followed by an angry  
explosion of thunder. </s>
```

```
<u> High, soft clouds accented the sky and a soft wind  
gently swayed the trees. </u>
```

```
</p>
```

```
</body>
```

```
</html>
```



It was a ~~dark and stormy night~~ bright and sunny day.  
~~Lightning streaked the sky, followed by an angry~~  
~~explosion of thunder.~~ High, soft clouds accented the sky.  
and a soft wind gently swayed the trees.