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# WELCOME TO

# CSE 4001 - INTERNET AND WEB PROGRAMMING

# Unit 2

## HTML and CSS

HTML5 Basics – Formatting – Colors – Images – Links – Tables – Lists – Layout–Forms– Canvas–Media.

CSS3 Basics – Selectors - Box Model - Backgrounds and Borders -Text Effects – Advanced Features.

**Text Books:**


- 1. Thomas Powell, HTML and CSS, Complete Reference, Fifth Edition, Mc Graw Hill, 2010
- 2. Thomas Powell, Fritz Schneider , JavaScript The complete reference, Mc Graw Hill, 2013
- 3. Tom Christiansen, Nathan Torkington, Perl Cookbook, O'Reilly, 2012
- 4. David Powers, PHP Solutions, Dynamic web page design made easy, Apress, 2010
- 5. Joe Fawcett, Danny Ayers, Liam R. E. Quin, Beginning XML, 5th Edition, Wrox, 2012


**Reference Books:**


- 1. Paul Dietel, Harvey Dietel and Abbey Dietel, Internet and World Wide Web How to program, 5th International Edition, Pearson, 2012

# Logical vs. Physical Tags

- In HTML there are both logical tags and physical tags.
- Logical tags are designed to describe (to the browser) the enclosed text's meaning.
- An example of a logical tag is the   tag.
- By placing text in between these tags you are telling the browser that the text has some greater importance.
- By default all browsers make the text appear bold when in between the  and  tags.

# HTML Introduction

What is HTML?

- HTML is the standard markup language for creating Web pages.
- HTML stands for Hyper Text Markup Language.
- HTML describes the structure of Web pages using markup.
- HTML elements are the building blocks of HTML pages.
- HTML elements are represented by tags.
- HTML tags label pieces of content such as "heading", "paragraph", "table", and so on
- Browsers do not display the HTML tags, but use them to render the content of the page

# A Simple HTML Document

Example

```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>
<h1>My First Heading</h1>
<p>My first paragraph.</p>
</body>
</html>
```

output: **This is a Heading**

**This is a paragraph.**

- The <!DOCTYPE html> declaration defines this document to be HTML5
- The <html> element is the root element of an HTML page
- The <head> element contains meta information about the document
- The <title> element specifies a title for the document
- The <body> element contains the visible page content
- The <h1> element defines a large heading
- The <p> element defines a paragraph

# Physical tags

- Physical tags on the other hand provide specific instructions on how to display the text they enclose. Examples of physical tags include:
- <b>: Makes the text bold.
- <big>: Makes the text usually one size bigger than what's around it.
- <i>: Makes text italic.

# HTML Elements

- <html>
- <head>
- <title>My First Webpage</title>
- </head>
- <body>
- This is my first homepage. This text is bold
- </body>
- </html>

This is an HTML element:

**This text is bold**

- The HTML element begins with a start tag: 
- The content of the HTML element is: This text is bold
- The HTML element ends with an end tag: 
- The purpose of the  tag is to define an HTML element that should be displayed as bold.

This is also an HTML element:

<body> This is my first homepage. **This text is bold**
</body>

- This HTML element starts with the start tag <body>, and ends with the end tag </body>.
- The purpose of the <body> tag is to define the HTML element that contains the body of the HTML document.

# Nested Tags

- You may have noticed in the example above, the <body> tag also contains other tags, like the  tab. When you enclose an element in with multiple tags, the last tag opened should be the first tag closed. For example:

***This is NOT the proper way to close nested tags. ***

***This is the proper way to close nested tags. ***

- **Note: It doesn't matter which tag is first, but they must be closed in the proper order.**

# Why Use Lowercase Tags?

- You may notice we've used lowercase tags even though I said that HTML tags are not case sensitive.
- <B> means the same as <b>.
- The World Wide Web Consortium (W3C), the group responsible for developing web standards, recommends lowercase tags in their HTML 4 recommendation, and XHTML (the next generation HTML) requires lowercase tags.

# Tag Attributes

- Tags can have attributes.
- Attributes can provide additional information about the HTML elements on your page.
- The <tag> tells the browser to do something,
- while the attribute tells the browser how to do it.
- For instance, if we add the bgcolor attribute, we can tell the browser that the background color of your page should be blue, like this: <body bgcolor="blue">.
- This tag defines an HTML table: <table>. With an added border attribute, you can tell the browser that the table should have no borders: <table border="0">.
- Attributes always come in name/value pairs like this: name="value".
- Attributes are always added to the start tag of an HTML element and the value is surrounded by quotes.

# Basic HTML Tags

| Tag | Description |
| --- | --- |
| <html> | Defines an HTML document |
| <body> | Defines the document's body |
| <h1> to <h6> | Defines header 1 to header 6 |
| <p> | Defines a paragraph |
| <br> | Inserts a single line break |
| <hr> | Defines a horizontal rule |
| <!--> | Defines a comment |

# Headings

- Headings are defined with the <h1> to <h6> tags. <h1> defines the largest heading while <h6> defines the smallest.
- **<h1>This is a heading</h1>**
- **<h2>This is a heading</h2>**
- **<h3>This is a heading</h3>**
- **<h4>This is a heading</h4>**
- **<h5>This is a heading</h5>**
- **<h6> This is a heading</h6>**

- <h5 align="left">I can align headings </h5>
- <h5 align="center">This is a centered heading </h5>
- <h5 align="right">This is a heading aligned to the right </h5>

# HTML Styles - CSS

- Styling HTML with CSS
- **CSS** stands for **C**ascading **S**tyle **S**heets.
- CSS describes **how HTML elements are to be displayed on screen, paper, or in other media**.
- CSS **saves a lot of work**. It can control the layout of multiple web pages all at once.
- CSS can be added to HTML elements in 3 ways:
- **Inline** - by using the style attribute in HTML elements
- **Internal** - by using a <style> element in the <head> section
- **External** - by using an external CSS file

# Inline CSS

- An inline CSS is used to apply a unique style to a single HTML element.
- An inline CSS uses the style attribute of an HTML element.
- This example sets the text color of the <h1> element to blue:
- <h1 style="color:blue;">This is a Blue Heading</h1>
- **This is a Blue Heading**

# Internal CSS

- An internal CSS is used to define a style for a single HTML page.
- An internal CSS is defined in the <head> section of an HTML page, within a <style> element:

```
<!DOCTYPE html>
<html>
<head>
<style>
body {background-color: powderblue;}
h1   {color: blue;}
p    {color: red;}
</style>
</head>
<body>

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

</body>
</html>
```

# External CSS

- An external style sheet is used to define the style for many HTML pages.
- **With an external style sheet, you can change the look of an entire web site, by changing one file!**

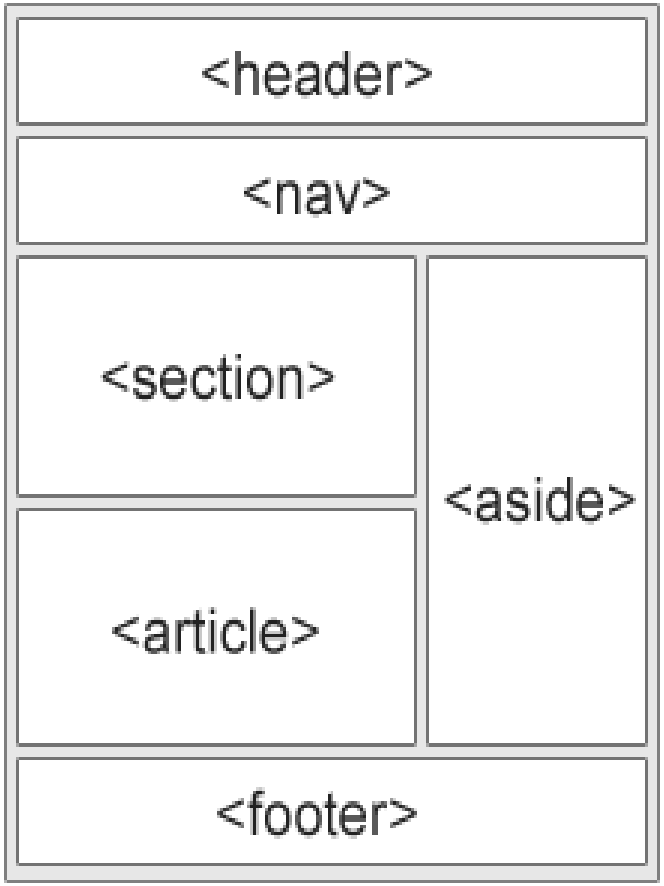
- ```
  <!DOCTYPE html>
  <html>
  <head>
    <link rel="stylesheet" href="styles.css">
  </head>
  <body>

  <h1>This is a heading</h1>
  This is a paragraph.

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

# Layout

- Websites often display content in multiple columns (like a magazine or a newspaper).
- HTML has several semantic elements that define the different parts of a web page:



- <header> - Defines a header for a document or a section
- <nav> - Defines a set of navigation links
- <section> - Defines a section in a document
- <article> - Defines an independent, self-contained content
- <aside> - Defines content aside from the content (like a sidebar)
- <footer> - Defines a footer for a document or a section
- <details> - Defines additional details that the user can open and close on demand
- <summary> - Defines a heading for the <details> element

- HTML Layout Techniques
- There are four different techniques to create multicolumn layouts. Each technique has its pros and cons:
- CSS framework
- CSS float property
- CSS flexbox
- CSS grid

- HTML Layout - Using Tables
- The simplest and most popular way of creating layouts is using HTML <table> tag. These tables are arranged in columns and rows, so you can utilize these rows and columns in whatever way you like.
- Example
- For example, the following HTML layout example is achieved using a table with 3 rows and 3 columns but the header and footer column spans both columns using the colspan attribute

- Multiple Columns Layout - Using Tables
- You can design your webpage to put your web content in multiple pages. You can keep your content in middle column and you can use left column to use menu and right column can be used to put advertisement or some other stuff.

Example

- Here is an example to create three column layout −

# HTML Canvas

- The HTML <canvas> element is used to draw graphics, on the fly, via JavaScript.
- The <canvas> element is only a container for graphics. You must use JavaScript to actually draw the graphics.
- Canvas has several methods for drawing paths, boxes, circles, text, and adding images.

# Browser Support

The numbers in the table specify the first browser version that fully supports the `<canvas>` element.

| Element |  |  |  |  |  |
|---|---|---|---|---|---|
| <canvas> | 4.0 | 9.0 | 2.0 | 3.1 | 9.0 |

# Canvas Examples

- A canvas is a rectangular area on an HTML page. By default, a canvas has no border and no content.
- The markup looks like this:
- <canvas id="myCanvas" width="200" height="100"></canvas>
- **Note:** Always specify an id attribute (to be referred to in a script), and a width and height attribute to define the size of the canvas. To add a border, use the style attribute.
- Here is an example of a basic, empty canvas:

# Media Element Tags

- HTML5 introduced 5 most popular media element tags i.e. **<audio>, <video>, <source>, <embed>, <track>.** This media element tags changed the entire development using HTML.
- In this article, you will get to know about these five media element tags briefly.

**Media Tags:**

- **<audio>:** It is an inline element that is used to embed sound files into a web page.
- **<video>:** It is used to embed video files into a web page.

- **<source>**: It is used to attach multimedia files like audio, video, and pictures.
- **<embed>:** It is used for embedding external applications which are generally multimedia content like audio or video into an HTML document.
- **<track>:** It specifies text tracks for media components audio and video.

**<audio> Tag:** It is a useful tag if you want to add audio such as songs, or any sound files into your webpage.

```
<audio>
<source src="sample.mp3" type="audio/mpeg">
</audio>
```