

# INTERNET TECHNOLOGIES

## (457CSS-3)

# LECTURE 4: WEB PUBLICATION - HTML



# Objectives

By the end of this unit, you should be able to define and know:

- HTML
- How coding HTML to create a web page

**CLO\_2: Recognize browsing tools, web development tools and web publishing.**

# Introduction to HTML

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

## *Example Explained*

- *The DOCTYPE declaration defines the document type*
- *The text between <html> and </html> describes the web page*
- *The text between <body> and </body> is the visible page content*
- *The text between <h1> and </h1> is displayed as a heading*
- *The text between <p> and </p> is displayed as a paragraph*

# Introduction to HTML (Cont.)

The <!DOCTYPE html> declaration is  
the syntax for the latest generation  
HTML - HTML5

# Introduction to HTML (Cont.)

## What is HTML?

HTML is a language for describing web pages.

- HTML stands for **Hyper Text Markup Language**
- HTML is not a programming language, it is a **markup language**
- A markup language is a set of **markup tags**
- The purpose of the tags are to **describe page content**

# Introduction to HTML (Cont.)

## HTML Tags

- HTML markup tags are usually called HTML tags
- HTML tags are keywords (tag names) surrounded by **angle brackets** like <html>
- HTML tags normally **come in pairs** like <b> and </b>
- The first tag in a pair is the **start tag**, the second tag is the **end tag**
- The end tag is written like the start tag, with a **forward slash** before the tag name
- Start and end tags are also called **opening tags** and **closing tags**

# Introduction to HTML (Cont.)

<tagname> content </tagname>

## HTML Elements

- "HTML tags" and "HTML elements" are often used to describe the same thing.
- But strictly speaking, an HTML element is everything between the start tag and the end tag, including the tags:
- HTML Element:
- <p>This is a paragraph.</p>

# Introduction to HTML (Cont.)

**HTML Documents = Web Pages**

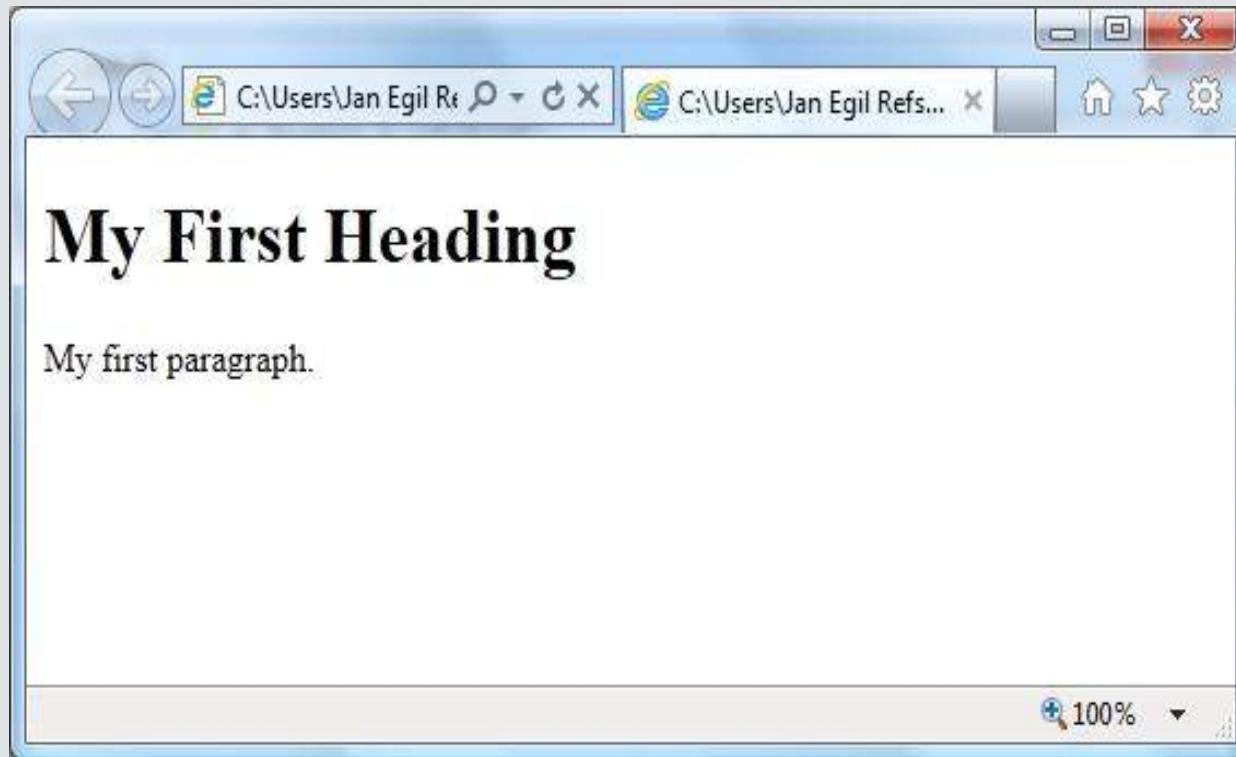
- HTML documents **describe web pages**
- HTML documents **contain HTML tags** and plain text
- HTML documents are also **called web pages**

# Introduction to HTML (Cont.)

## Web Browsers

- The purpose of a web browser (Chrome, Internet Explorer, Firefox) is to **read HTML documents and display them as web pages**. The browser does not display the HTML tags, but uses the tags to interpret the content of the page:

# Introduction to HTML (Cont.)



# Introduction to HTML (Cont.)

## HTML Page Structure

Below is a visualization of an HTML page structure:

```
<!DOCTYPE html>
<html>
<body>
<h1>This a Heading</h1>
<p>This is a paragraph.</p>
<p>This is another paragraph.</p>
</body>
</html>
```

# Introduction to HTML (Cont.)

## ■ HTML Headings

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

## ■ Example

```
<h1>This is a heading</h1>
<h2>This is a heading</h2>
<h3>This is a heading</h3>
```

# Introduction to HTML (Cont.)

- **HTML Paragraphs** HTML paragraphs are defined with the `<p>` tag.
- **Example:**

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

# Introduction to HTML (Cont.)

## HTML Links

- HTML links are defined with the `<a>` tag.

## Example

```
<a href="http://www.w3schools.com">This is a link</a>
```

**Note:** The link address is specified in the `href` attribute.

# Introduction to HTML (Cont.)

## HTML Images

HTML images are defined with the <img> tag.

### Example

```

```

Note: The filename and the size of the image are provided as attributes.

# Introduction to HTML (Cont.)

## HTML Elements

HTML documents are defined by HTML elements.

## HTML Elements

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

Start tag *	Element content	End tag *
<p>	This is a paragraph	</p>
<a href="default.htm">	This is a link	</a>
 	This is a line break	

\* The start tag is often called the **opening tag**. The end tag is often called the **closing tag**.

# Introduction to HTML (Cont.)

## HTML Element Syntax

- An HTML element starts with a **start tag / opening tag**
- An HTML element ends with an **end tag / closing tag**
- The **element content** is everything between the start and the end tag
- Some HTML elements have **empty content**
- Empty elements are **closed in the start tag**
- Most HTML elements can have **attributes**

# Introduction to HTML (Cont.)

## ■ Nested HTML Elements

- Most HTML elements can be nested (can contain other HTML elements).
- HTML documents consist of nested HTML elements.

## ■ HTML Document Example

```
<!DOCTYPE html>
<html>
<body>
<p>This is my first paragraph.</p>
</body>
</html>
```

# Introduction to HTML (Cont.)

## HTML Example Explained

### The `<p>` element:

```
<p>This is my first paragraph.</p>
```

The `<p>` element defines a paragraph in the HTML document.

The element has a start tag `<p>` and an end tag `</p>`. The element content is: This is my first paragraph.

### The `<body>` element:

```
<body>
```

```
<p>This is my first paragraph.</p>
```

```
</body>
```

The `<body>` element defines the body of the HTML document.

The element has a start tag `<body>` and an end tag `</body>`.

# Introduction to HTML (Cont.)

The `<html>` element:

```
<html>
  <body>
    <p>This is my first paragraph.</p>
  </body>

</html>
```

The `<html>` element defines the whole HTML document.

The element has a start tag `<html>` and an end tag `</html>`.

The element content is another HTML element (the body element).

# Introduction to HTML (Cont.)

Some HTML elements might display correctly even if you forget the end tag:

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

The example above works in most browsers, because the closing tag is considered optional.

## Empty HTML Elements

HTML elements with no content are called empty elements.

`<br>` is an empty element without a closing tag (the `<br>` tag defines a line break).

HTML tags are **not** case sensitive: `<P>` means the same as `<p>`. Many web sites use uppercase HTML tags.

# Introduction to HTML (Cont.)

## HTML Attributes

Attributes provide additional information about HTML elements.

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

## Attribute Example

- HTML links are defined with the `<a>` tag. The link address is specified in the **href attribute**:

## Example

```
<a href="http://www.w3schools.com">This is a link</a>
```

# Introduction to HTML (Cont.)

## HTML Attributes Reference

Below is a list of some attributes that are standard for most HTML elements:

Attribute	Value	Description
class	<i>classname</i>	Specifies a classname for an element
id	<i>id</i>	Specifies a unique id for an element
style	<i>style_definition</i>	Specifies an inline style for an element
title	<i>tooltip_text</i>	Specifies extra information about an element (displayed as a tool tip)

# Introduction to HTML (Cont.)

## HTML Headings

- Headings are important in HTML documents.
- Headings are defined with the `<h1>` to `<h6>` tags.
- `<h1>` defines the **most** important heading. `<h6>` defines the **least** important heading.
- **Example**

```
<h1>This is a heading</h1>
```

```
<h2>This is a heading</h2>
```

```
<h3>This is a heading</h3>
```

# Introduction to HTML (Cont.)

## HTML Lines

- The `<hr />` tag creates a horizontal line in an HTML page.

The `hr` element can be used to separate content:

- Example

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

```
<hr />
```

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

```
<hr />
```

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

# Introduction to HTML (Cont.)

## HTML Comments

- Comments can be inserted into the HTML code to make it more readable and understandable. Comments are ignored by the browser and are not displayed.
- Comments are written like this:
- **Example**

```
<!-- This is a comment -->
```

# Introduction to HTML (Cont.)

## HTML Text Formatting

**This text is bold**

This text is big

*This text is italic*

This is computer output

This is <sub>subscript</sub> and <sup>superscript</sup>

# Introduction to HTML (Cont.)

## HTML Formatting Tags

- HTML uses tags like `<b>` and `<i>` for formatting output, like **bold** or *italic* text.
- These HTML tags are called formatting tags (look at the bottom of this page for a complete reference).
- Often `<strong>` renders as `<b>`, and `<em>` renders as `<i>`.

Tag	Description
<code>&lt;b&gt;</code>	Defines bold text
<code>&lt;big&gt;</code>	Defines big text
<code>&lt;em&gt;</code>	Defines emphasized text
<code>&lt;i&gt;</code>	Defines italic text
<code>&lt;small&gt;</code>	Defines small text
<code>&lt;strong&gt;</code>	Defines strong text
<code>&lt;sub&gt;</code>	Defines subscripted text
<code>&lt;sup&gt;</code>	Defines superscripted text

# Introduction to HTML (Cont.)

## HTML Tables:

- Tables are defined with the `<table>` tag.
- A table is divided into rows (with the `<tr>` tag)
- Each row is divided into data cells (with the `<td>` tag).
- `td` stands for "table data," and holds the content of a data cell.
- A `<td>` tag can contain text, links, images, lists, forms, other tables, etc.

# Introduction to HTML (Cont.)

## Table Example:

```
<table border="1">

  <tr>
    <td>row 1, cell 1</td>
    <td>row 1, cell 2</td>
  </tr>

  <tr>
    <td>row 2, cell 1</td>
    <td>row 2, cell 2</td>
  </tr>

</table>
```

# Introduction to HTML (Cont.)

How the HTML code above looks in a browser:

row 1, cell 1	row 1, cell 2
row 2, cell 1	row 2, cell 2

# Introduction to HTML (Cont.)

## HTML Tables and the Border Attribute

- If you do not specify a border attribute, the table will be displayed without borders.  
Sometimes this can be useful, but most of the time, we want the borders to show.
- To display a table with borders, specify the border attribute:

```
<table border="1">  
  
  <tr>  
  
    <td>Row 1, cell 1</td>  
  
    <td>Row 1, cell 2</td>  
  
  </tr>  
  
</table>
```

# Introduction to HTML (Cont.)

## HTML Table Headers:

- Header information in a table are defined with **the <th> tag**.
- All major browsers display the text in the <th> element as bold and centered.

```
<table border="1">
  <tr>
    <th>Header 1</th>
    <th>Header 2</th>
  </tr>
  <tr>
    <td>row 1, cell 1</td>
    <td>row 1, cell 2</td>
  </tr>
  <tr>
    <td>row 2, cell 1</td>
    <td>row 2, cell 2</td>
  </tr>
</table>
```

# Introduction to HTML (Cont.)

How the HTML code above looks in your browser:

Header 1	Header 2
row 1, cell 1	row 1, cell 2
row 2, cell 1	row 2, cell 2

**Table Caption:**

- Define the caption of the table by using `<caption>`
- To the above table code just add  
`<caption> Table </caption>` after the `<table>` tag.

# Introduction to HTML (Cont.)

## How to define table cells that span more than one row or one column?

```
<!DOCTYPE html>
<html>
<body>
<h4>Cell that spans two columns:</h4>
<table border="1">
<tr>
<th>Name</th>
<th colspan="2">Telephone</th>
</tr>
<tr>
<td>Bill Gates</td>
<td>555 77 854</td>
<td>555 77 855</td>
</tr>
</table>
</body>
</html>
```

# Introduction to HTML (Cont.)

```
<!DOCTYPE html>
<html>
<body>
<h4> Cell that spans two rows: </h4>
<table border="1">
<tr>
<th>First Name:</th>
<td>Bill Gates</td>
</tr>
<tr>
<th rowspan="2">Telephone:</th>
<td>555 77 854</td>
</tr>
<tr>
<td>555 77 855</td>
</tr>
</table>
</body>
</html>
```

# Introduction to HTML (Cont.)

The result will be:

- a) Cell that spans two columns:

Name	Telephone
Bill Gates	555 77 854

- b) Cell that spans two rows:

First Name:	Bill Gates
Telephone	555 77 854
	555 77 855

Cell Padding and Cell Spacing :

→ can be used to format the table with spaces between each cell and each row.

→ These are the attribute of the table tag.

# Introduction to HTML (Cont.)

## HTML Lists:

The most common HTML lists are ordered and unordered lists:

### An ordered list:

1. The first list item
2. The second list item
3. The third list item

### An unordered list:

- List item
- List item
- List item

# Introduction to HTML (Cont.)

## HTML Unordered Lists:

- An unordered list starts with the `<ul>` tag. Each list item starts with the `<li>` tag.
- The list items are marked with bullets (typically small black circles).

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

How the HTML code above looks in a browser:

- Coffee
- Milk

# Introduction to HTML (Cont.)

## HTML Ordered Lists:

- An ordered list starts with the `<ol>` tag. Each list item starts with the `<li>` tag.
- The list items are marked with numbers.

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

How the HTML code above looks in a browser:

1. Coffee
2. Milk

# Introduction to HTML (Cont.)

## HTML Definition Lists:

A definition list is a list of items, with a description of each item.

The `<dl>` tag defines a definition list.

The `<dl>` tag is used in conjunction with `<dt>` (defines the item in the list) and `<dd>` (describes the item in the list):

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

# Introduction to HTML (Cont.)

How the HTML code above looks in a browser:

Coffee

- black hot drink

Milk

- white cold drink

Inside a list item you can put text, line breaks, images, links, other lists, etc.

**HTML List Tags**

Tag	Description
<ol>	Defines an ordered list
<ul>	Defines an unordered list
<li>	Defines a list item
<dl>	Defines a definition list
<dt>	Defines an item in a definition list
<dd>	Defines a description of an item in a definition list

# Introduction to HTML (Cont.)

## HTML Editors

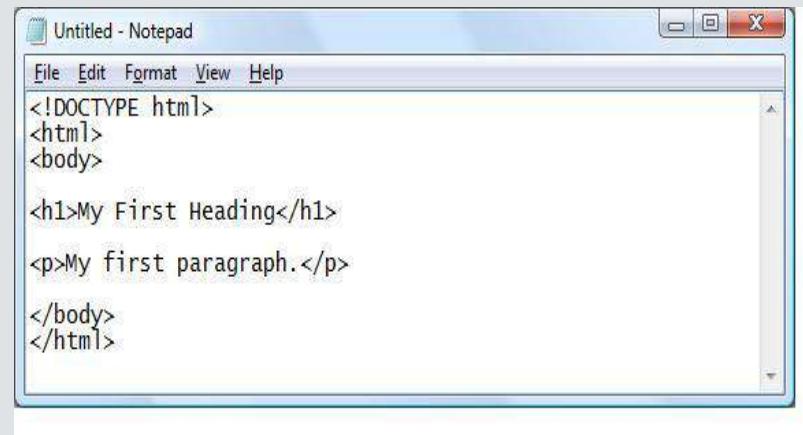
### Writing HTML Using Notepad

Follow the 4 steps below to create your first web page with Notepad.

#### Step 1: Start Notepad

#### Step 2: Edit Your HTML with Notepad

Type your HTML code into your Notepad:

A screenshot of the Microsoft Notepad application window titled "Untitled - Notepad". The window has a standard Windows title bar with icons for minimize, maximize, and close. The menu bar includes File, Edit, Format, View, and Help. The main text area contains the following HTML code:

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

The code is written in a monospaced font, with tags like <h1> and <p> highlighted in blue, likely indicating they are HTML tags or being styled by the Notepad application.

# Introduction to HTML (Cont.)

## Step 3: Save Your HTML

Select **Save as..** in Notepad's file menu.

When you save an HTML file, you can use either the `.htm` or the `.html` file extension.

There is no difference, it is entirely up to you.

## Step 4: Run the HTML in Your Browser

Start your web browser and open your html file from the **File, Open** menu, or just browse the folder and double-click your HTML file.

# Online Links

- <https://www.w3schools.com/html/>
- <http://www.pagetutor.com/index.html>
- <http://www.tutorialspoint.com/html/>
- <http://htmldog.com/guides/html/beginner/>
- <http://www.davesite.com/webstation/html/>
- <http://www.echoecho.com/html.htm>