# IS 242 Web Application Development 1

Lecture 1: Introduction to HTML5: PART (1)

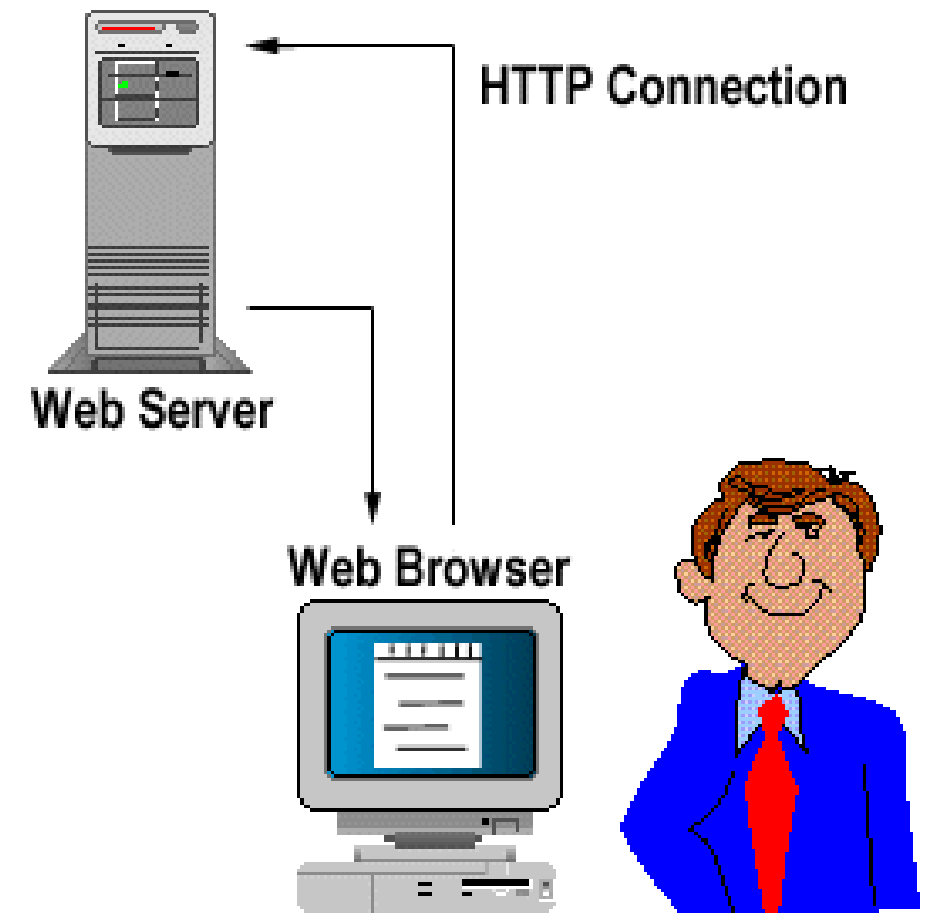# In today's lecture you will learn ..

- What is HTML

- HTML document structure

- How to write your first web page using HTML

- Basic HTML elements

# What is HTML?

- Stands for HyperText Markup Language and it is the most common language to write web pages.

- Unlike programming languages (e.g. Java, C#), HTML is a **markup** language and NOT a programming language.

- Describes **the structure and the content of web documents** (i.e., web pages) to be displayed in web browsers.

# How it all works ..

- HTML documents are stored in **web servers** and are requested by **clients** (e.g. web browsers) running on local computers or smartphones.

- For example, typing www.deitel.com/books/downloads.html into a web browser's address field requests the file **downloads.html** from the **books** directory on the web server running at www.deitel.com.

- The browser places the HTML document in the computer and **renders/displays** it using the browser.

HTTP Connection

Web Server

Web Browser

# HTML Tags

- A markup language is a set of markup tags:

  - HTML tags are **keywords** (tag names) surrounded by angle brackets:$<$tagname$>$content$</$tagname$>$

  - HTML tags normally (NOT always) come in pairs like $<$p$>$ and $</$p$>$.

  - The first tag in a pair is the **start tag (opening tag)**, the second tag is the end tag **(closing tag).**

  - The end tag is written like the start tag, but with a **slash** before the tag name.

  - The HTML **element in a html document** is everything from the start tag to the end tag

# HTML Documents

- HTML **documents** are made up by HTML **elements**.

- Must start with a document type declaration tag:
  <!DOCTYPE html>.

- The HTML document itself begins with <html> and ends with </html>.

-  <head> tag contains meta data (i.e. information about the document) and is placed between the <html> tag and the <body> tag.

- The visible part of the HTML document (i.e. seen in web browsers) is between <body> and </body>.

Document type declaration tag
<html>
    <head>
          Document header related tags
    </head>

    <body>
        Document body related tags
    </body>

</html>

# Nested HTML Elements

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

HTML Document Example

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

- The example above contains 3 HTML elements.
  The <p> element
  The <body> element
  The <html> element
  **Note:** Don't Forget the End Tag (Many HTML elements will produce unexpected results and/or errors if you forget the end tag).

# Document Type Declaration Tag

- <!DOCTYPE>

- Helps the browser to display a web page correctly.

- There are different document types on the web.

- To display a document correctly, the browser must know both type and version.

- To tell the browser that the document is a html 5 document to be rendered according to html 5 specifications, you need to include <!DOCTYPE html> in each document you create.

- The doctype declaration is not case sensitive. All cases are acceptable:

<!DOCTYPE html>    <!DOCTYPE HTML>    <!doctype html> <!Doctype Html>

# html, head and body Elements

- The **html** element:
  - encloses the **head** section and the **body** section.

- The **head** element:
  - contains information about the HTML document (i.e. metadata), such as the character set and the **title**.
  - can also contain special document-formatting instructions called **CSS3 style sheets** and client-side programs called **scripts** for creating dynamic web pages (will be covered in other lectures).

- The **body** element:
  - contains the page's content, which the browser displays when the user visits the web page.

# HTML Example
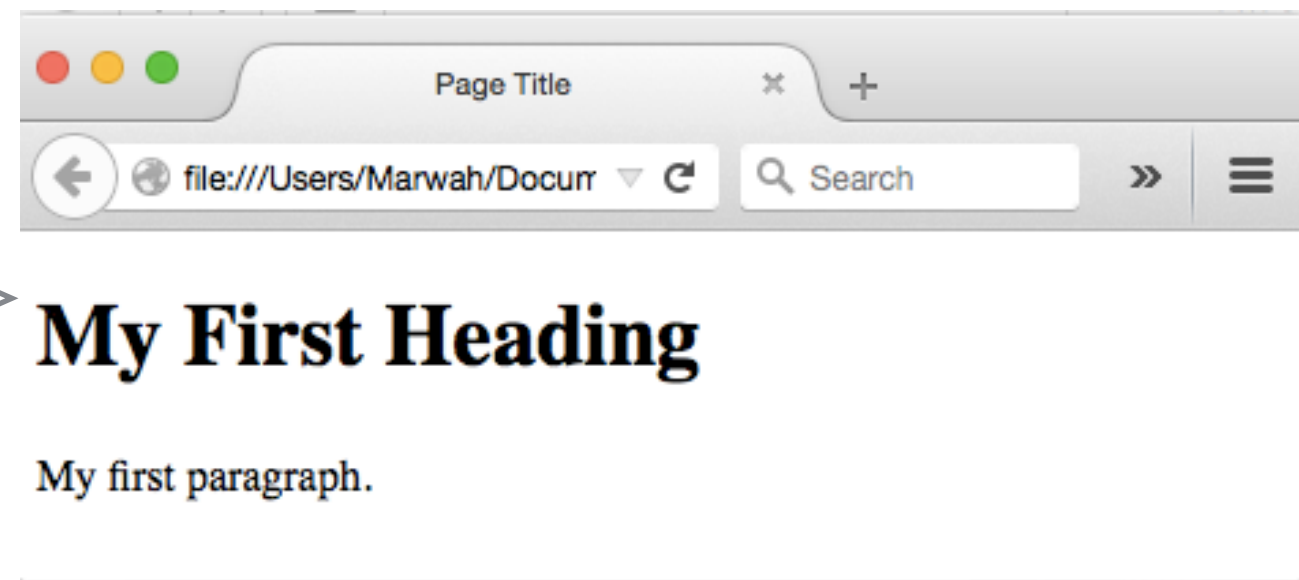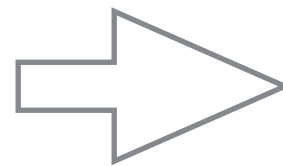
```
<!DOCTYPE html>
<html>
    <head>
        <title>Page Title</title>
    </head>

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

- The **DOCTYPE** declaration defines the document type to be HTML

- The text between **<html>** and **</html>** describes an HTML document

- The text between **<head>** and **</head>** provides information about the document

- The text between **<title>** and **</title>** provides a title for the document

- The text between **<body>** and **</body>** describes the visible page content

- The text between **<h1>** and **</h1>** describes a heading

- The text between **<p>** and **</p>** describes paragraph

# Web Browser

- The purpose of a web browser (Chrome, IE, Firefox, Safari) is to read HTML documents and display them.

- The browser **does not display the HTML tags,** but **uses them to determine how to display the document.**

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

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

# HTML Titles

- The HTML <title> element is meta data and it defines the HTML document's title.

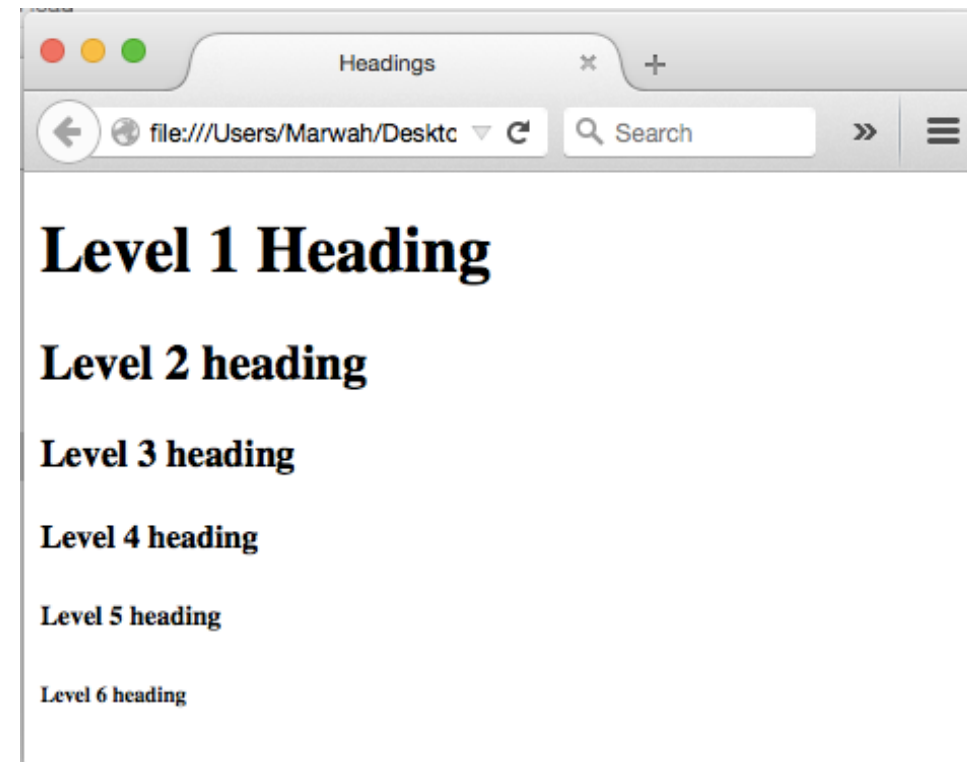- The title will not be displayed in the document, but might be displayed in the browser tab.

# HTML Headings

- Some text in an HTML5 document may be **more important than other text.**

- HTML5 provides **six heading elements** (h1 through h6) for specifying the relative importance of information.

- h1 headings should be main headings, followed by h2 headings, then the less important h3, and so on.

- Browsers automatically add some **empty space (a margin)** before and after each heading.

- Use HTML headings for headings only. Don't use headings to make text **BIG** or **bold.**

- Search engines use your headings to index the structure and content of your web pages.

- Users skim your pages by its headings. It is important to use headings to show the document structure.

# HTML Headings

```
<body>
    <h1>Level 1 Heading</h1>
    <h2>Level 2 heading</h2>
    <h3>Level 3 heading</h3>
    <h4>Level 4 heading</h4>
    <h5>Level 5 heading</h5>
    <h6>Level 6 heading</h6>
</body>
```
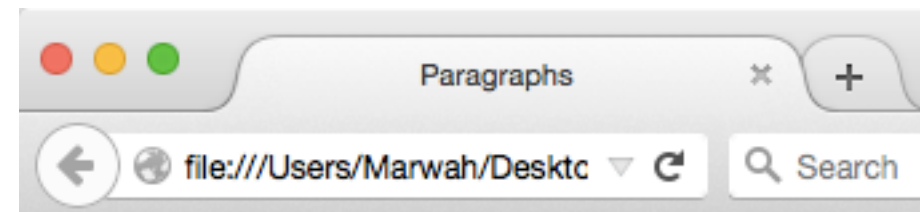
# HTML Paragraphs

- Help define the structure of a document.

- All the text placed between the <p> and </p> tags forms one paragraph.

- When a browser renders a paragraph, it places extra space above and below the paragraph text.

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

# 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 Syntax:
  <!-- Write your comments here -->

**Note:** There is an exclamation point after the opening bracket, but not before the closing bracket.

# Empty HTML Elements

- HTML elements with no content are called **empty elements.**

- &lt;br&gt; is an empty element without a closing tag (the &lt;br&gt; tag defines a line break).

- Tip: <span style="color:red">In XHTML, all elements must be closed.</span> Adding a slash inside the start tag, like <span style="color:red">&lt;br /&gt;</span>, is the proper way of closing empty elements in XHTML (and XML).

# HTML Line Breaks

- With HTML, you cannot change the output by adding extra spaces or extra lines in your HTML code.

- The browser will remove extra spaces and extra lines when the page is displayed. Any number of lines count as one line, and any number of spaces count as one space.

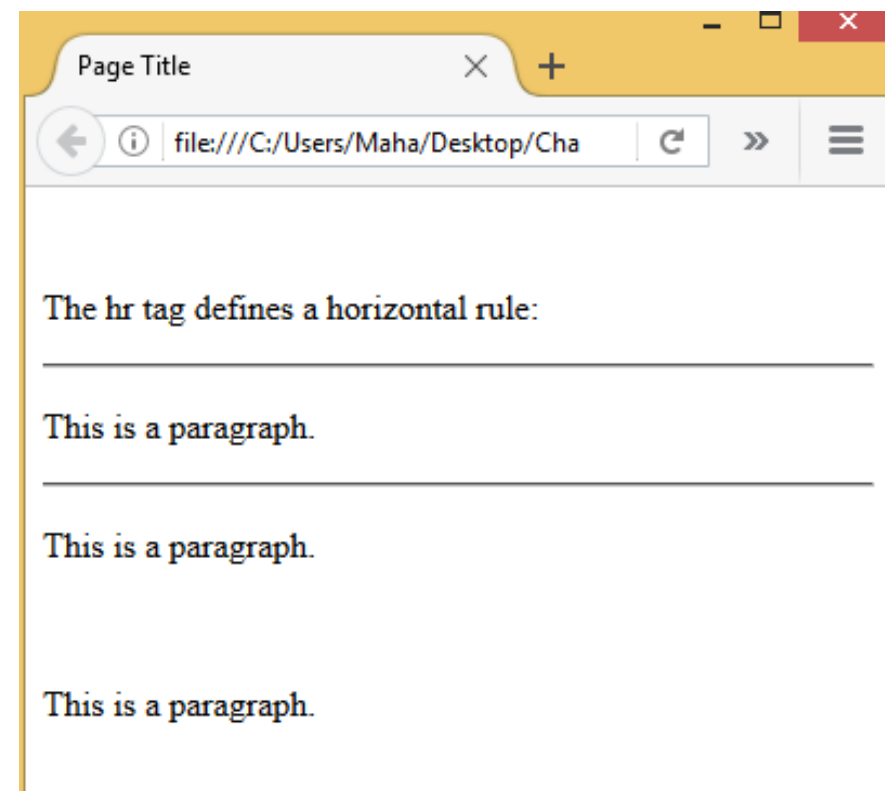- Use the <br /> tag if you want a line break (a new line) without starting a new paragraph:

  Example
  <p>This is<br />a para<br />graph with line breaks</p>

- The <br /> element is an empty HTML element. It has no end tag.

# HTML Horizontal Lines

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

- The hr element can be used to separate content.

- You better avoid using it. CSS can be used to add horizontal rules and other formatting to documents.

```
<body>
    <p>The hr tag defines a horizontal rule:</p>
    <hr />
    <p>This is a paragraph.</p>
    <hr />
    <p>This is a paragraph.</p>
    <br />
    <p>This is a paragraph.</p>
</body>
```



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# HTML Pre-formatted Text

- The HTML **\<pre\>** element defines a block of **pre-formatted** text, with structured spaces and lines.

- To display anything, with right spacing and line-breaks, you must wrap the text in a **\<pre\>** element:

```
<p>This will display as a poem:</p>
<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>
```

Page Title

file:///C:/Users/Maha/Desktop/Cha

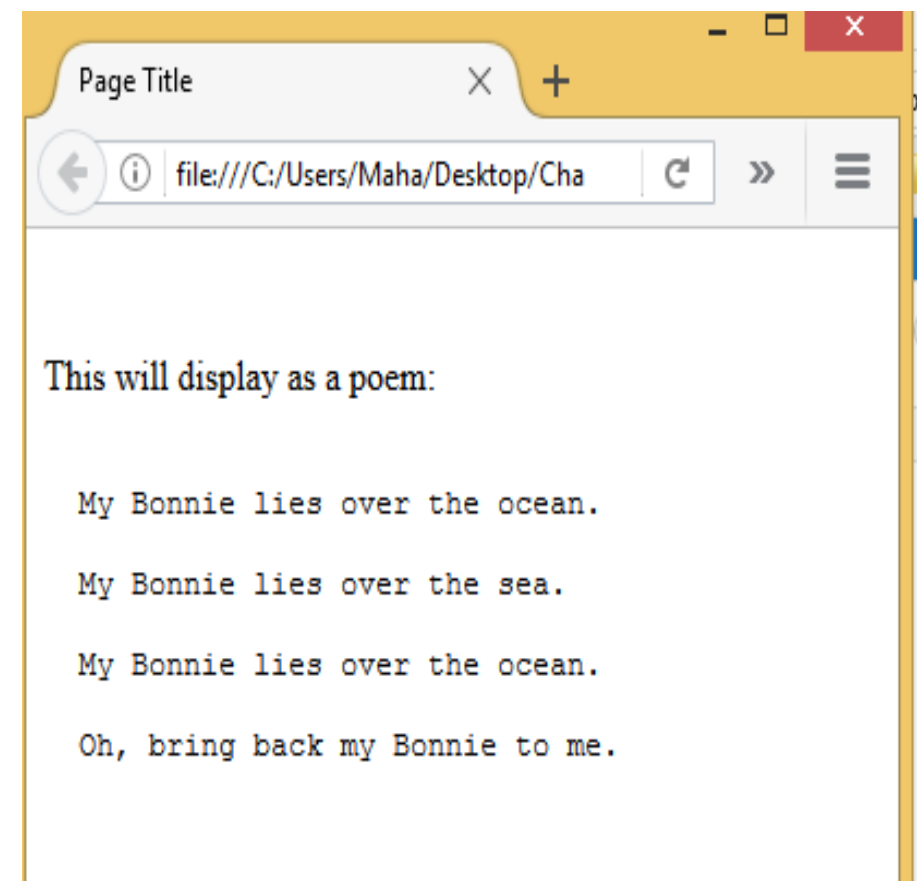This will display as a poem:

```
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.
```

# HTML Tips: Use Lowercase Tags & Use Lowercase Attributes

- HTML tags are case-insensitive (NOT case sensitive) : <P> means the same as <p>. Many web sites use uppercase HTML tags.

- World Wide Web Consortium (W3C) recommends lowercase tags and attributes.

- Newer versions of (X)HTML will demand lowercase attributes and tags.

# References

- [http://www.w3schools.com](http://www.w3schools.com)

- Deitel & Deitel (2011): *Internet and World Wide Web How to Program*, 5th Edition, Harvey & Paul Deitel& Associates.