Web Application Development

Hypertext Markup Language (HTML)

Outline

- Definition
- Structure of a Web page
- Tags, Elements and Attributes
- Images
- Tables

Definition

- HTML is Hypertext Markup Language, which defines the markup tags to control the appearance of web documents

- Web browsers use markup tags to present documents

- Nowadays, HTML is the most widely used language on the Web

Example

```
<html>
    <head>
        <title>Web Application Development</title>
    </head>
    <body>
        <!– Example of markup tags in HTML -->
        <h1>About the Course.</h1>
        <p>The course provides students with basic knowledge about Web
        technologies. On finishing the course, students should be able to
        develop simple web application.</p>
        <p>During the course, students have to complete lecture notes and
        assignments.</p>
    </body>
</html>
```
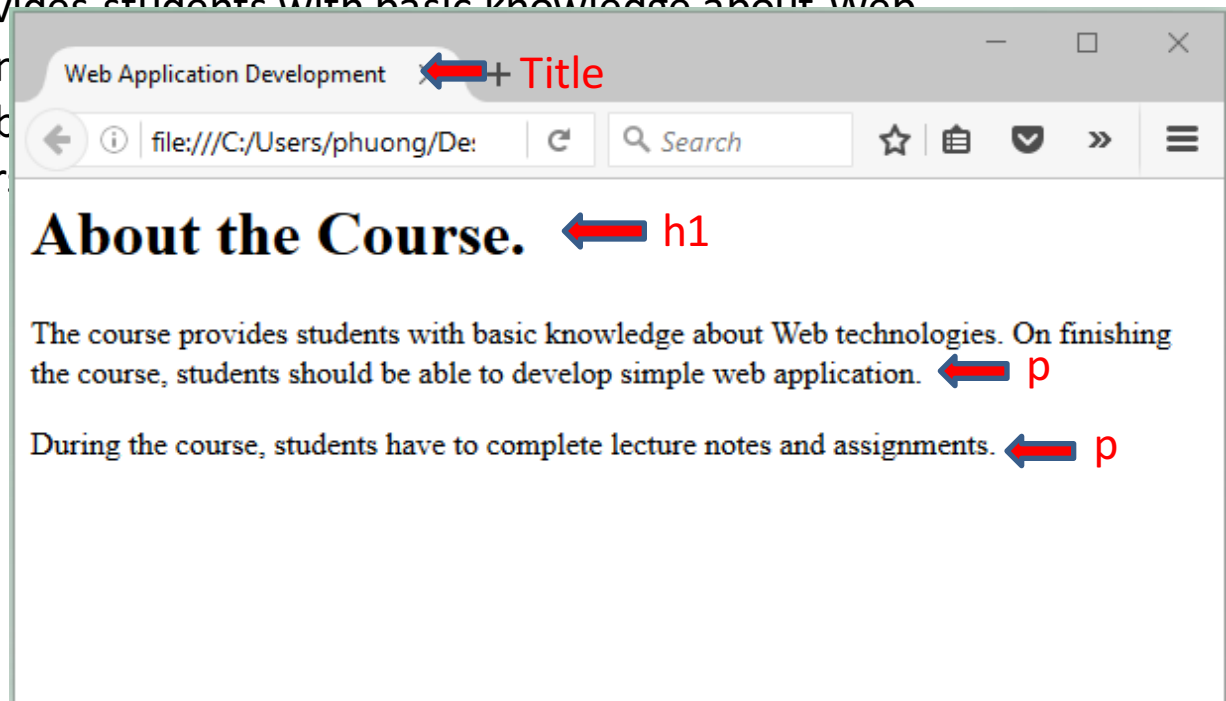
Markup tags used are: <html>, <head>, <title>, <body>, <h1>, <p>
Comment tag: <!– comment content -->

Example

```html
<html>
    <head>
        <title>Web Application Development</title>
    </head>
    <body>
        <h1>About the Course.</h1>
        <p>The course provides students with basic knowledge about Web
        technologies. On fir
        develop simple web
        <p>During the cour
        assignments.</p>
    </body>
</html>
```
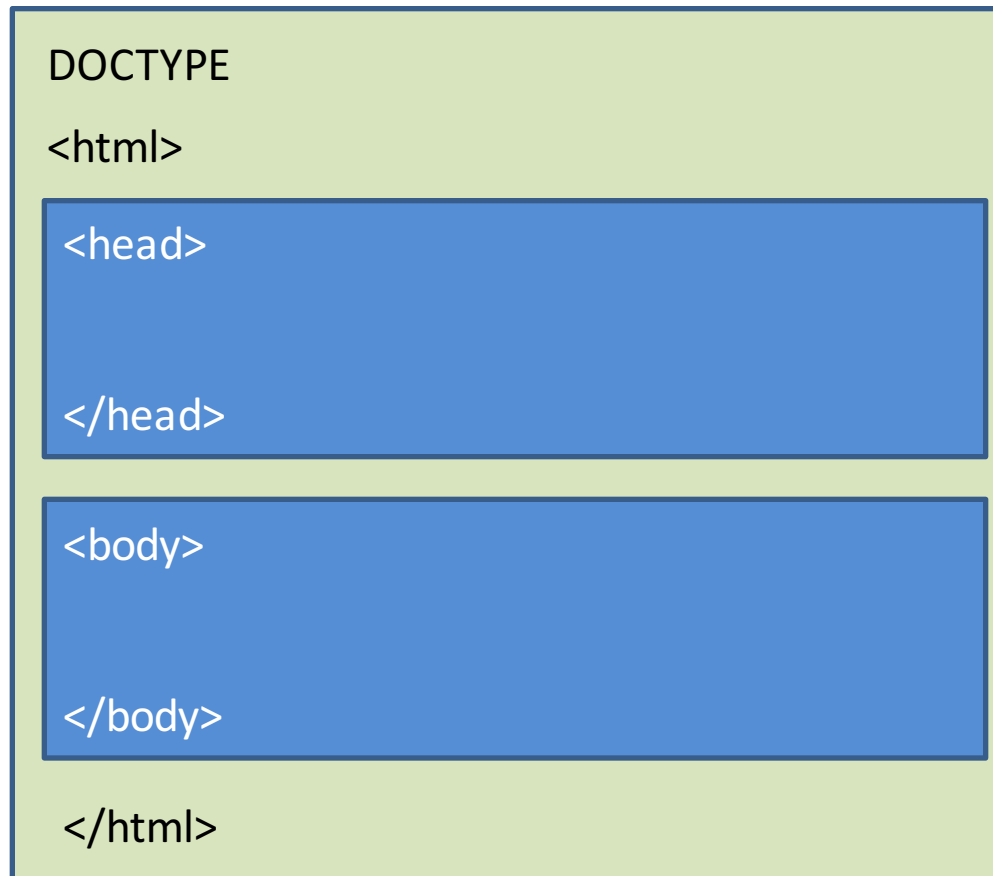
Structure of a Web Page

- Markup tags define structures of the documents

DOCTYPE

<html>

<head>
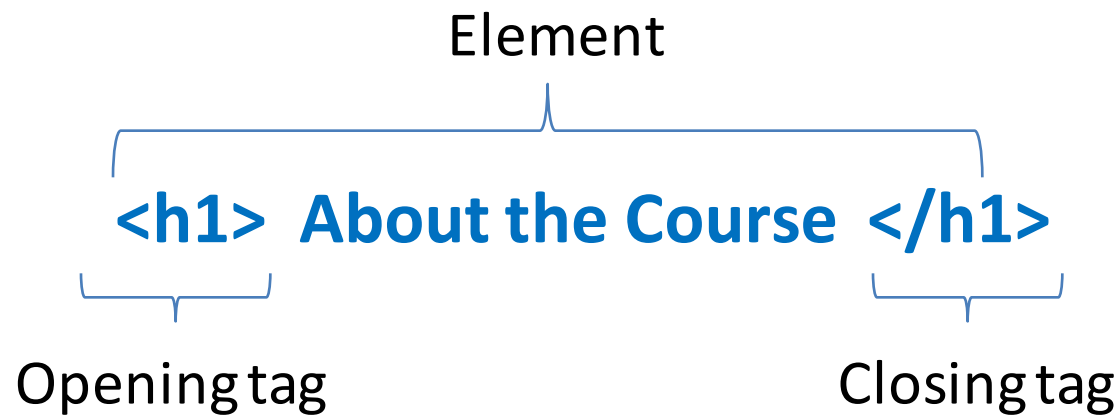
</head>

<body>

</body>

</html>

DOCTYPE Declaration

- Specifies which version of (X)HTML is used

- Placed at the beginning of the (X)HTML documents

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
```

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
```

Tags and Elements

Element

<h1> About the Course </h1>

Opening tag   Closing tag

Attributes of Elements

- <p> is the tag for defining paragraphs
- "lang" is an **attribute** of element <p> for specifying language of the paragraph

  <p lang="en-us">Content of Paragraph</p>

- An attribute has two parts: name and value

- Name and value are separated by "=" sign

- Values must be held in double quotation marks

- Attribute names must be in lowercase

- An element may have several attributes

Core Elements and Attributes

- The <html> element
  - Contain two children: <head> and <body>
- The <head> element
  - The first thing to appear after the <html> tag
  - Contains elements such as <title>, <style>, <script>, etc.
- The <body> element
  - Main content of the web page
- The <title> element
  - Display title of the Web pages at the top of the browser
  - Used as default name for bookmarking
  - Used for search engines

Headings

- HTML offers six levels of headings, which use the elements <h1>, <h2>, <h3>, <h4>, <h5>, and <h6>

- While browsers can display headings differently, they tend to display the <h1> element as the largest and <h6> as the smallest

Paragraphs

- <p> elements are used for defining paragraphs
-
 is for adding a line break
- <hr />: The <hr /> element creates a horizontal rule across the page

Presentational Elements

- ***<b>:*** Anything that appears in a <b> element is displayed in **bold**

- ***<i>:*** The content of an <i> element is displayed in *italicized text*

- ***<u>:*** <u>underline</u>

- ***<s> (or <strike>):*** ~~strikethrough~~

Presentational Elements

- **<sup>**: The content of a <sup> element is written in superscript

- **<sub>**: The content of a <sub> element is written in subscript

- **<big>**: The content of the <big> element is displayed one font size larger than the rest of the text surrounding it. If the font is already the largest size, it has no effect

- **<small>**

Lists

- tag defines a list item
- List items can be grouped in 3 types:
  - Unordered lists, which are like lists of bullet points:
  - Ordered lists, which use a sequence of numbers or letters instead of bullet points:
  - Description lists, which allow you to define and describe a term: <dl>, <dt>, <dd>

Lists

- tag defines a list item
- List items can be grouped in 3 types:
  - Unordered lists, which are like lists of bullet points:
  - Ordered lists, which use a sequence of numbers or letters instead of bullet points:
  - Description lists, which allow you to define and describe a term: <dl>, <dt>, <dd>

Example of Order List

- HTML tags:

<p>An ordered list:</p>

    Coffee

    Tea

    Milk

Result:

An ordered list:

    1. Coffee

    2. Tea

    3. Milk

Example of Unorder List

• **HTML tags:**

<p>An unordered list:</p>

    Coffee

    Tea

    Milk

Result:

An unordered list:

- Coffee
- Tea
- Milk

Example of Description List

- HTML tags:

```
<dl>
  <dt>Coffee</dt>
  <dd>Black hot drink</dd>
  <dt>Milk</dt>
  <dd>White cold drink</dd>
</dl>
```

Result:

Coffee

Black hot drink

Milk

White cold drink

Block-level Elements

- A block-level element starts on a new line and takes up the full width available (stretches out to the left and right as far as it can)

- Examples of block-level elements:

  <div>

  <h1> - <h6>

  <p>

  <form>

Inline Elements

- An inline element does not start on a new line and only takes up as much width as necessary

- Examples of inline elements:

  <span>

  <a>

  <img>

Links

- Use element **\<a\>** with attribute "href" to create links

- Value of **"href"** may be a *relative* address or a full url

- Attribute **"title"** can be used to create tooltip for helping users

Link Example

THIS IS THE PAGE THE LINK TAKES YOU TO

THIS IS THE TEXT THE USER CLICKS ON

`<a href="http://www.imdb.com">IMDB</a>`

OPENING LINK TAG

CLOSING LINK TAG

URLs

- Uniform Resource Locator
- Each resource (Web page, site, file) has a unique URL

URLs

- Protocol: http://, https://, ftp://, file://
- Domain: domain name or IP address
- Path: begins with a forward slash character, and may consist of one or more directory names
- If a filename is not given, the web server will usually do one of three things
  - Return a default file (index.htm, index.html,…)
  - Offer a list of files and directories
  - An error message

Absolute and Relative URLs

- Absolute URL: can be used to access the Webpage from anywhere

  http://www.usth.edu.vn/news/test.html

- Relative URL: indicates where the resource is in relation to the current page
  - Same directory: test.html
  - Parent directory: ../test.html
  - Sub-directory: example/test.html

Images

- Types of images
  - Bitmap: JPEG, PNG, GIF
  - Vector: Flash, SVG
- Add an image to a webpage

Images as Links

```
<a href="../index.html" title="Homepage">
    <img src="images/banana.jpg"/>
</a>
```

Tables

Column 1 Row 1	Column 2 Row 1	Column 3 Row 1	Column 4 Row 1
Column 1 Row 2	Column 2 Row 2	Column 3 Row 2	Column 4 Row 2
Column 1 Row 3	Column 2 Row 3	Column 3 Row 3	Column 4 Row 3
Column 1 Row 4	Column 2 Row 4	Column 3 Row 4	Column 4 Row 4
Column 1 Row 5	Column 2 Row 5	Column 3 Row 5	Column 4 Row 5

ROWS

COLUMNS

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

        <td>Row 2, Column 1</td>
        <td>Row 2, Column 2</td>
</tr>
</table>
```

Column & Row Spanning

```
<table>
<tr>
    <th></th>
    <th>ABC</th>
    <th>BBC</th>
    <th>CNN</th>
</tr>
<tr>
    <th>6pm - 7pm</th>
    <td rowspan="2">Movie</td>
    <td>Comedy</td>
    <td>News</td>
</tr>
<tr>
    <th>7pm - 8pm</th>
    <td>Sport</td>
    <td>Current Affairs</td>
</tr>
</table>
```

	ABC	BBC	CNN
6pm - 7pm	Movie	Comedy	News
7pm - 8pm		Sport	Current Affairs

Tools

- Editor: Any text editor can be used
  - Notepad
  - Wordpad
  - Notepad++ (recommended)
  - Microsoft Expression Web
  - Komodo
  - Dreamweaver
- Web server:
  - Apache
  - Xampp