

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

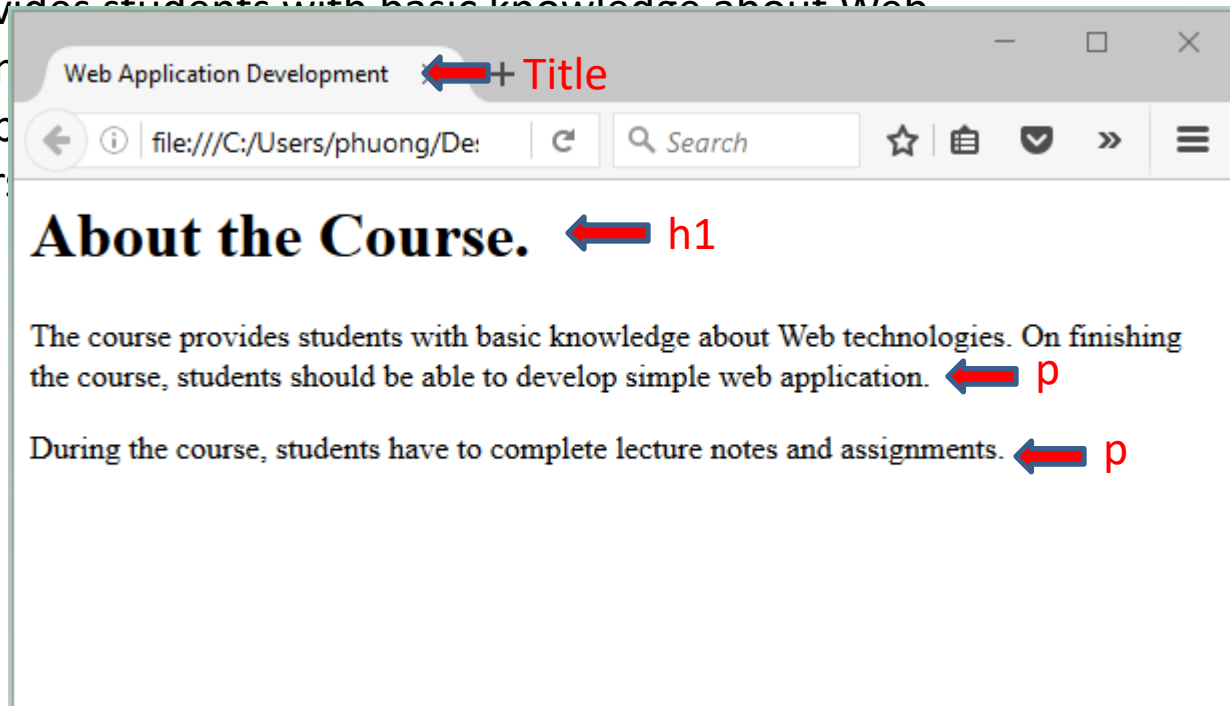
```
<html>
  <head>
    <title>Web Application Development</title>
  </head>
  <body>
    <!-- Example of markup tags in HTML -->
    <h1>About the Course.</h1>
    <p>The course provides students with basic knowledge about Web
    technologies. On finishing the course, students should be able to
    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 -->

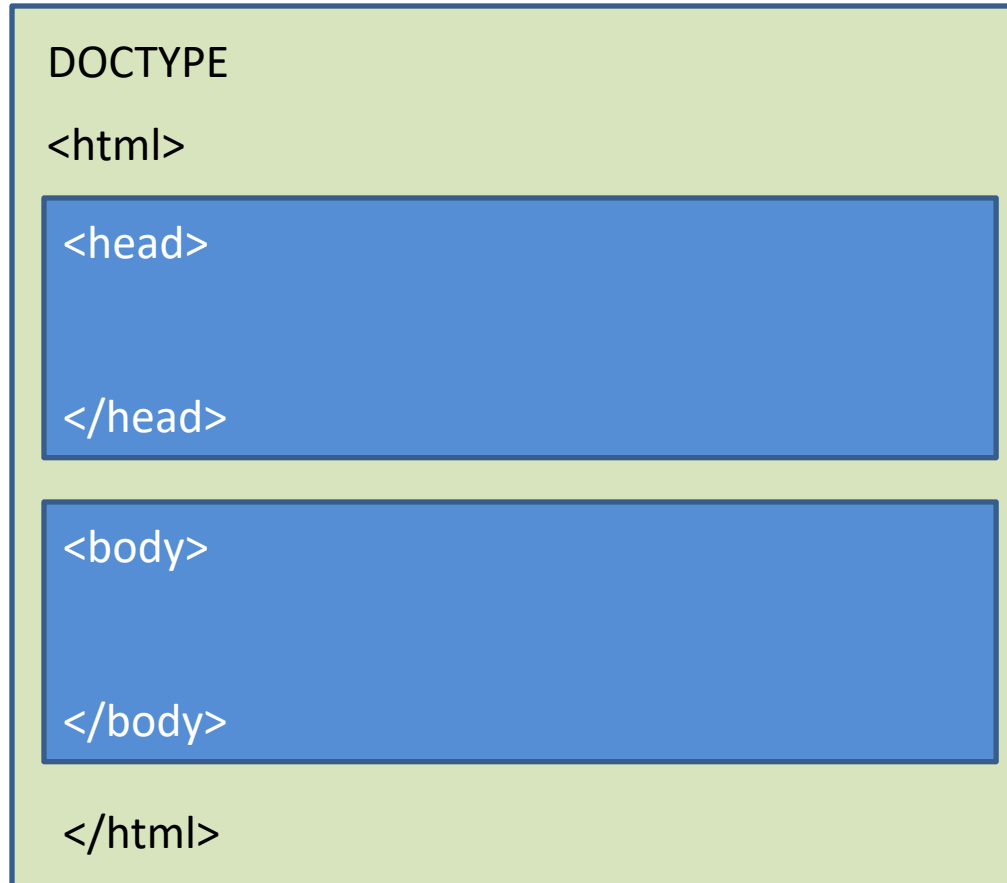
# Example

```
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    <title>Web Application Development</title>
  </head>
  <body>
    <h1>About the Course.</h1>
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```



# Structure of a Web Page

- Markup tags define structures of the documents



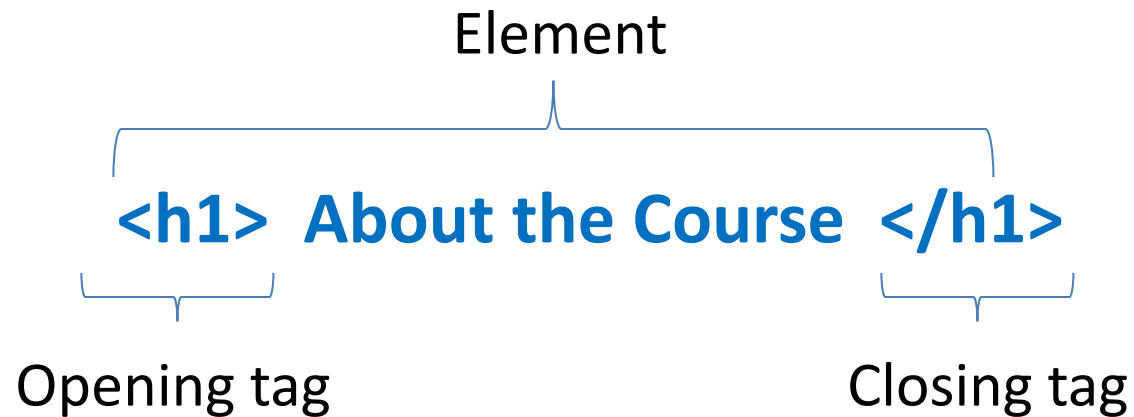
# DOCTYPE Declaration

- 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





# 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
- `<br />` 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>**: underline
- **<s>** (or **<strike>**): ~~strikethrough~~

# Presentational Elements

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

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

# Lists

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# Example of Order List

- HTML tags:

```
<p>An ordered list:</p>
```

```
<ol>
```

```
    <li>Coffee</li>
```

```
    <li>Tea</li>
```

```
    <li>Milk</li>
```

```
</ol>
```

## Result:

An ordered list:

1. Coffee

2. Tea

3. Milk

# Example of Unorder List

- HTML tags:

```
<p>An unordered list:</p>
```

```
<ul>
```

```
    <li>Coffee</li>
```

```
    <li>Tea</li>
```

```
    <li>Milk</li>
```

```
</ul>
```

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



# 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">  
      
</a>
```

# Tables

Diagram illustrating a table structure with 5 rows and 4 columns.

ROWS (horizontal dimension)

COLUMNS (vertical dimension)

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

```
<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

