

CSC584 Enterprise Programming

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CHAPTER 2 – WEB APPLICATION BASICS & HTML

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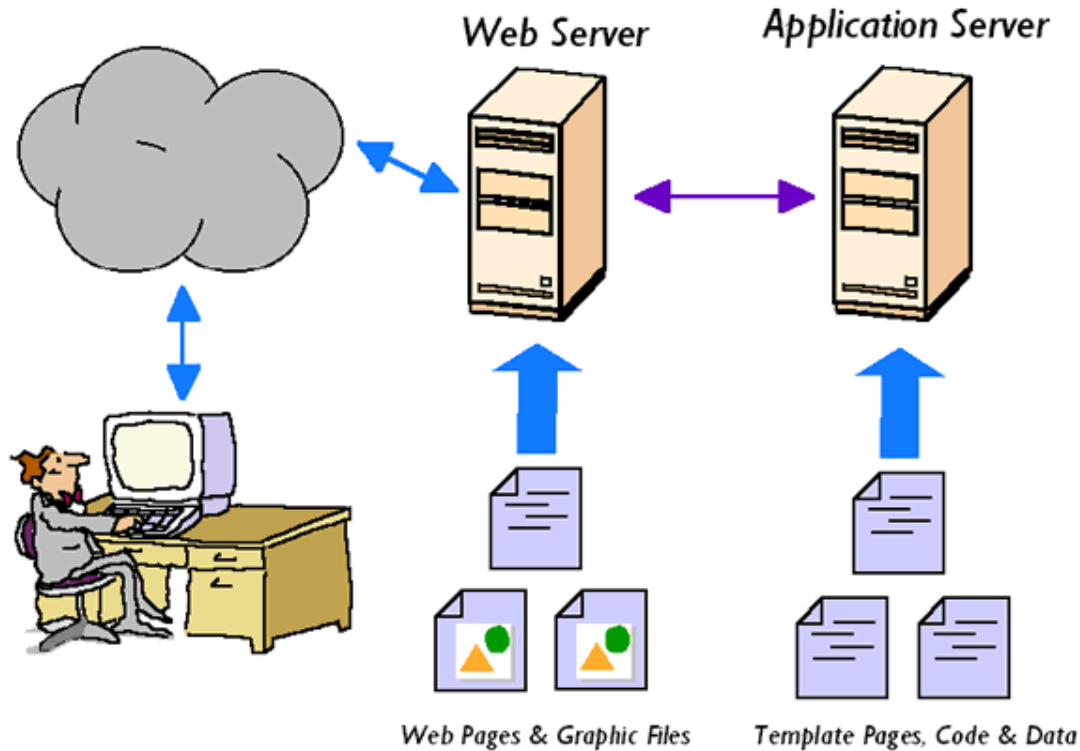
Chapter 2 Outline

- Web system
- HTTP
- Domain names
- HTML

Fundamental of web system

- User enter the required document (web pages) and the host of where it can be found
- The browser sends a request with special format
- The request is handled by web server.
- The web server receive the request, locates the document on its local file system and sends it back to the browser.

Basic Web System



Document Identification - URL

- The full identifier for referencing and obtaining the document is called a Uniform Resource Locator
- It consists of 4 elements
 1. The protocol
 2. Host machine name
 3. Optional port number
 4. Document name/location
- Example:
<http://www.utusan.com.my/index.html>
<http://www.utusan.com.my:80/index.html>

HTTP

- The network protocol of the Web which specifies how a browser should format and send request to a web and vice versa
- A request line format has 3 parts, separated by spaces:
 1. A method name
 2. The local path of the requested resource
 3. The version of HTTP being used

A typical request line is

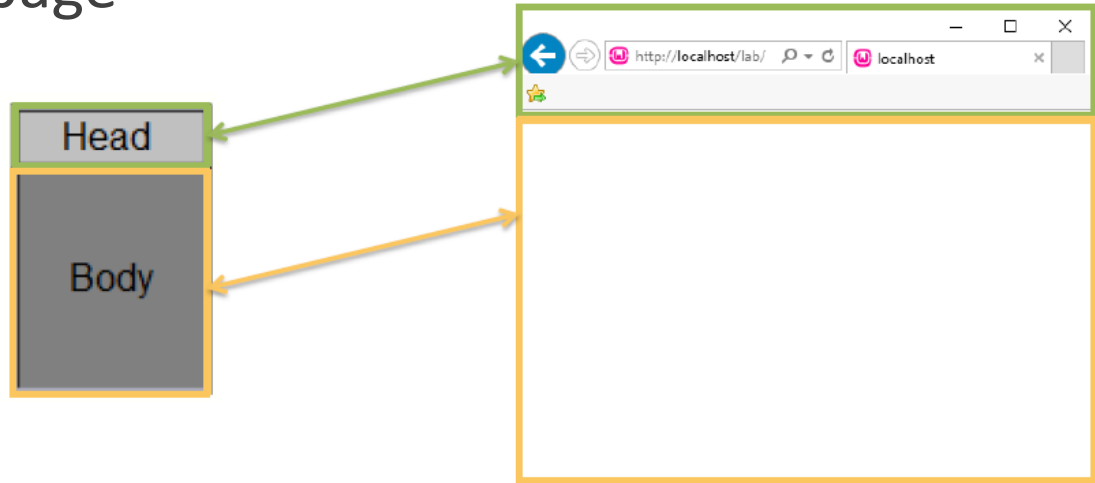
GET /path/to/file/index.html HTTP/1.0

What is an HTML?

- HTML (Hyper Text Markup Language):
 - Is a markup language used to write web pages (web documents)
- An HTML file is a text file containing small **markup tags**
- An HTML file must have an **htm** or **html** file extension
- An HTML file can be created using a **simple text editor**
- A HTML document may also include:
 - **Cascading style sheets (CSS)**: Used for adding style to optimize the layout or look of web pages
 - **Javascript**: Used for on-page actions (will make web pages look dynamic)
 - **JSP/PHP**: Allows you to retrieve and display information from server

HTML Page Structure

- All normal web pages consist of:
 1. **Head:** Is used for text and tags that do not show directly on the web page
 2. **Body:** Is used for text and tags that are shown directly on the web page

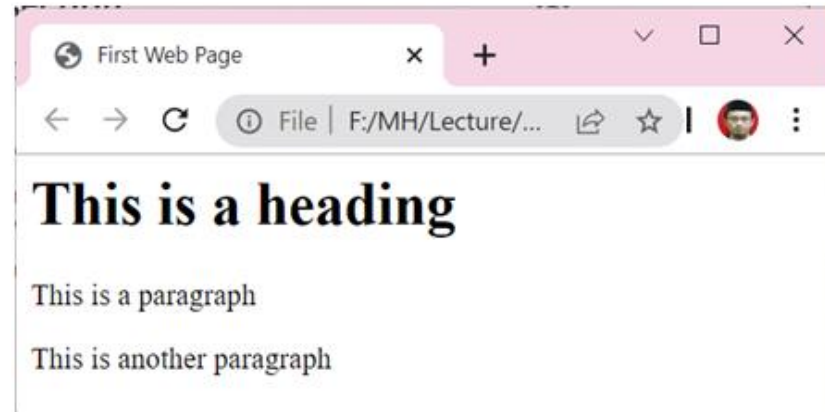


HTML Page Structure

Head and body section:

- Example:

```
<html>
  <head>
    <title>First Web Page</title>
  </head>
  <body>
    <h1>This is a heading</h1>
    <p>This is a paragraph</p>
    <p>This is another paragraph</p>
  </body>
</html>
```



HTML Tags

HTML Tags

- Are keywords (tag names) surrounded by **angle brackets** < >
- The tag names tell the browser **how to display the content**

HTML tags normally **come in pairs**, where:

- **The 1st tag (Start Tag):** Is the start tag/opening tags
- **The 2nd tag (End Tag):** Is the end tag/closing tags
- Eg. <p>This is a paragraph</p>

HTML tags are **NOT** case sensitive

- **<body> = <BODY> = <Body>**

HTML elements

- HTML elements used to describe HTML documents
- Most HTML elements consists of 3 parts:
 1. Start tag
 2. Content
 3. End tag
- Some HTML elements have empty content
For example:
 - `
`
 - `<hr>`
 - ``

For example:

The body element of a web page is declared as follows:

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

For example:

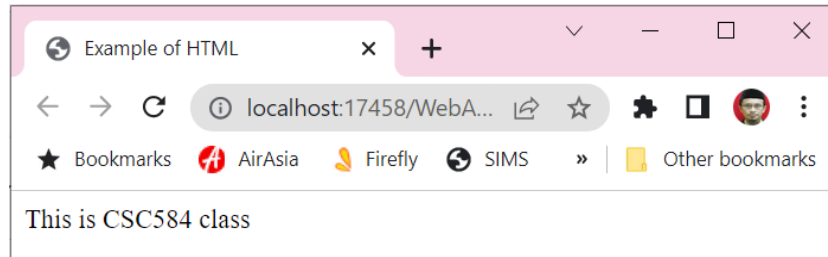
`
` element is used for a line break

```
<p>
  The 1st line of paragraph.<br>
  The 2nd line of paragraph.
</p>
```

Example: HTML

```
<html>
  <head>
    <title>Example of HTML</title>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
  </head>
  <body>
    <div>This is CSC584 class</div>
  </body>
</html>
```

Output →

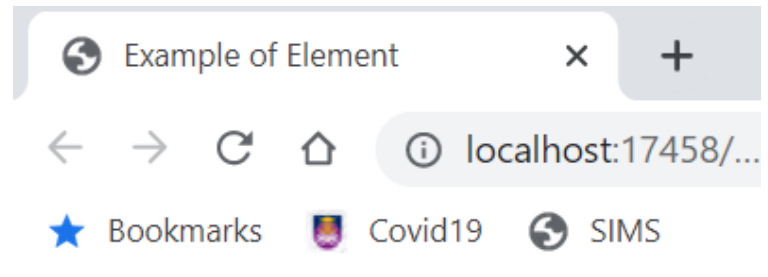


Basic elements of HTML

- A text header, denoted using the `<h1>`, `<h2>`, `<h3>`, `<h4>`, `<h5>`, `<h6>` tags.
- A paragraph, denoted using the `<p>` tag.
- A horizontal ruler, denoted using the `<hr>` tag.
- A link, denoted using the `<a>` (anchor) tag.
- A list, denoted using the `` (unordered list), `` (ordered list) and `` (list element) tags.
- A divider, denoted using the `<div>` tag
- A text span, denoted using the `` tag
- An image, denoted using the `` tag

Example: Basic element of HTML

```
<html>
  <head>
    <title>Example of Element</title>
  </head>
  <body>
    <h1>Header 1</h1>
    <p>This is my page</p>
    <ul>
      <li>Coffee</li>
      <li>Tea</li>
    </ul>
    <ol>
      <li>Coffee</li>
      <li>Tea</li>
    </ol>
  </body>
</html>
```



Header 1

This is my page

- Coffee
- Tea

1. Coffee
2. Tea

HTML elements

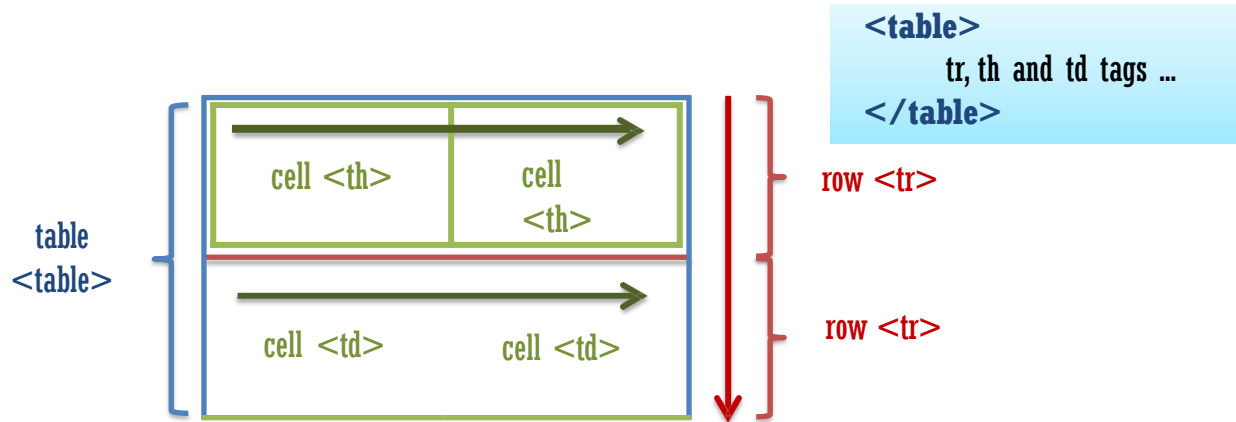
- This is an HTML element:

```
<b>This text is bold</b>
```

- The HTML element starts 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.

HTML Table

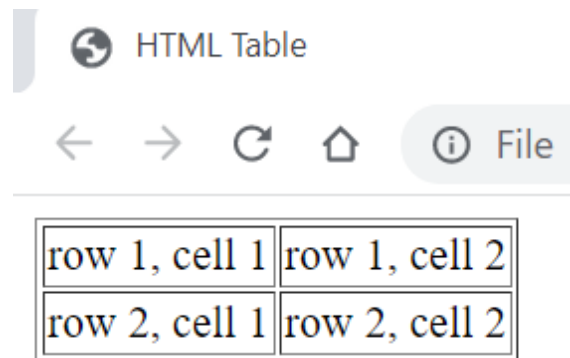
- `<table>` tag is used to create table in HTML
- `<tr>` tag is used to create row
- `<th>` tag is used to create table heading
- `<td>` tag is used to create table data where it can contain text, image, and so forth



HTML Table

■ Example

```
<html>
  <head>
    <title>HTML Table</title>
  </head>
  <body>
    <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>
  </body>
</html>
```



Note: the **border** is an attribute is used to put a border across all the cells. If you do not need a border, use border = "0".

Tag Attributes

- Tags can have attributes. Attributes provide additional information to an HTML element.
- The following 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:
`attributename="value"`
- Attributes are always specified in the start tag of an HTML element.

The Anchor Tag and the Href Attribute

- HTML uses the `<a>` (anchor) tag to create a link to another document.
- An anchor can point to any resource on the Web: an HTML page, an image, a sound file, a movie, etc.
- The syntax of creating an anchor:

```
<a href="url">Text to be displayed</a>
```

- The href attribute is used to address the document to link to, and the words between the open and close of the anchor tag will be displayed as a hyperlink.
- This anchor defines a link to W3Schools:

```
<a href="http://www.w3schools.com">Visit W3Schools!</a>
```

HTML Forms

- A form is an area that can contain **form elements**.
- Form elements are elements that allow the user to enter information (like text fields, textarea fields, drop-down menus, radio buttons, checkboxes, etc.) in a form.
- A form is defined with the <form> tag.

```
<form>  
  <input>  
  <input>  
</form>
```

HTML Form

- The method attributes
 - The method attribute specifies the HTTP method (GET or POST) to be used when submitting the form data

`<form action="order.php" method="get">`

or

`<form action="order.php" method="post">`

HTML Form

The method attributes

- When to use GET?
 - The default method when submitting form data is GET
 - However, when GET is used, the submitted form data will be visible in the page address field
 - Never use GET to send sensitive data (visible in URL)
 - The length of a URL is limited (about 3000 char)
 - Useful for form submissions where a user wants to bookmark the result
 - GET is better for non-secure data

HTML Form

The method attributes

- When to use POST?
 - Always use POST if the form data contains sensitive or personal information
 - POST has no size limitations
 - Can be used to send large amounts of data
 - Form submissions with POST cannot be bookmarked

Sample Input Form

```
<html>
<body>
  <h2>The input Element</h2>
  <form>
    <fieldset>
      <legend>Personalia:</legend>
      <label for="name">Name:</label>
      <input type="text" id="name" name="name" /><br />
      <label for="gender">Gender</label>
      <input type="radio" id="male" name="gender" value="M" />
      <label for="male">Male</label>
      <input type="radio" id="female" name="gender" value="F" />
      <label for="female">Female</label><br />
      <input type="checkbox" value="Bike" />
      <label for="vehicle1" id="vehicle1">I have a bike</label>
      <input type="checkbox" value="Car" />
      <label for="vehicle2" id="vehicle2">I have a car</label><br />
      <label for="cars">Choose a car:</label>
      <select id="cars" name="cars">
        <option value="fiat">Fiat</option>
        <option value="honda">Honda</option>
      </select>
      <br />
      <label for="msg">Message:</label><br />
      <textarea name="message" rows="5" cols="5"> </textarea><br />
      <input type="submit" value="Submit" />
      <input type="reset" value="Reset" /><input
        type="button"
        value="Click Me"
      />
    </fieldset>
  </form>
</body>
</html>
```


Sample Input Form

The input Element

The diagram illustrates a sample input form with various HTML elements highlighted by labels and arrows. The form is titled "Personalia:" and is enclosed in a `fieldset`. The elements and their corresponding labels are:

- `legend`: Points to the "Personalia:" label.
- `text`: Points to the "Name:" text input field.
- `radio`: Points to the "Gender" section, specifically the "Female" radio button.
- `checkbox`: Points to the "I have a bike" checkbox.
- `Select/option`: Points to the "Choose a car:" dropdown menu.
- `textarea`: Points to the "Message:" text area.

The form contains the following fields and controls:

- Name:** A text input field.
- Gender:** Radio buttons for "Male" and "Female" (selected).
- I have a bike:** A checked checkbox.
- I have a car:** An unchecked checkbox.
- Choose a car:** A dropdown menu with "Fiat" selected.
- Message:** A text area.
- Buttons:** "Submit", "Reset", and "Click Me".

Form: Action Attribute and the Submit Button

- When the user clicks on the "Submit" button, the content of the form is sent to another file. The form's action attribute defines the name of the file to send the content to. The file defined in the action attribute usually does something with the received input.

```
<form name="input" action="html_form_action.asp"
method="get">
Username:
<input type="text" name="user">
<input type="submit" value="Submit">
</form>
```

How it looks in a browser:

Username:

For more detail on HTML pls go to the following website:
<http://www.w3schools.com/html/default.asp>