



Pemrograman Web

1. Pengenalan HTML

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World Wide Web

- Internet merupakan jaringan global yang menghubungkan suatu network dengan network lainnya di seluruh dunia.
 - TCP/IP menjadi protocol penghubung antara jaringan-jaringan yang beragam di seluruh dunia untuk dapat berkomunikasi.
 - World Wide Web (WWW) merupakan bagian dari internet yang paling cepat berkembang dan paling populer.
-

-
- WWW bekerja berdasarkan pada tiga mekanisme berikut:
 - **Protocol** standard aturan yang di gunakan untuk berkomunikasi pada computer networking, Hypertext Transfer Protocol (HTTP) adalah protocol untuk WWW.
 - **Address** WWW memiliki aturan penamaan alamat web yaitu URL(Uniform Resource Locator) yang di gunakan sebagai standard alamat internet.
 - **HTML** digunakan untuk membuat document yang bisa di akses melalui web.
-

- Contoh:

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

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

What is HTML?

- HTML is a language for describing web pages.
 - HTML stands for **H**yper **T**ext **M**arkup **L**anguage
 - 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**
-

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 `` and ``
 - 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**
 - `<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>`
-

HTML Documents = Web Pages

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

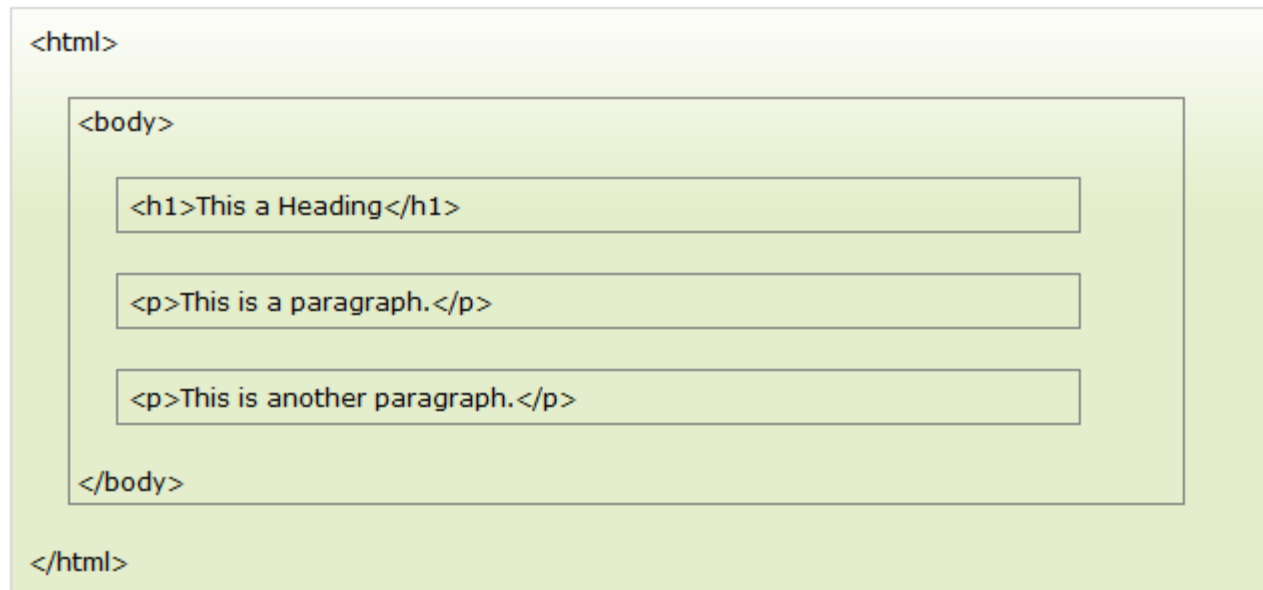
Web Browsers

- 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:



HTML Page Structure

- Below is a visualization of an HTML page structure:



HTML Paragraphs

- HTML paragraphs are defined with the <p> tag.

```
.....  
<html>  
<body>  
  
<p>This is first paragraph.</p>  
<p>This is second paragraph.</p>  
<p>This is third paragraph.</p>  
|  
</body>  
</html>
```

This is first paragraph.

This is second paragraph.

This is third paragraph.

HTML Elements

- HTML documents are defined by HTML elements.
- An HTML element is everything from the start tag to the end tag:

Start tag *	Element content	End tag *
<code><p></code>	This is a paragraph	<code></p></code>
<code></code>	This is a link	<code></code>
<code>
</code>		

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

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**

 - **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>`

- The example above contains 3 HTML elements.

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>`.
 - The element content is another HTML element.
-

- **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).
-

Don't Forget the End Tag

- 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.
 - Never rely on this. Many HTML elements will produce unexpected results and/or errors if you forget the end tag .
-

■ Empty HTML Elements

- HTML elements with no content are called empty elements.
- `
` is an empty element without a closing tag (the `
` tag defines a line break).

■ HTML Tip: Use Lowercase Tags

- HTML tags are not case sensitive: `<P>` means the same as `<p>`. Many web sites use uppercase HTML tags.
 - The World Wide Web Consortium (W3C) **recommends** lowercase in HTML 4, and **demands** lowercase tags in XHTML.
-

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**
`This is a link`

 - **Always Quote Attribute Values**
 - Attribute values should always be enclosed in quotes.
 - Double style quotes are the most common, but single style quotes are also allowed.
-

HTML Attributes Reference

- See File DOC



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>

```
<html>
<body>

<h1>This is heading 1</h1>
<h2>This is heading 2</h2>
<h3>This is heading 3</h3>
<h4>This is heading 4</h4>
<h5>This is heading 5</h5>
<h6>This is heading 6</h6>

</body>
</html>
```

This is heading 1

This is heading 2

This is heading 3

This is heading 4

This is heading 5

This is heading 6

■ Headings Are Important

- ❑ 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.
 - ❑ Since users may skim your pages by its headings, it is important to use headings to show the document structure.
 - ❑ H1 headings should be used as main headings, followed by H2 headings, then the less important H3 headings, and so on.
-

HTML Lines

- The `<hr />` tag creates a horizontal line in an HTML page.
- The `hr` element can be used to separate content:

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

The `hr` tag defines a horizontal rule:



This is a paragraph



This is a paragraph



This is a paragraph

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 -->`

```
<!--This comment will not be displayed-->  
<p>This is a paragraph</p>
```

This is a paragraph

```
</body>  
</html>
```

Tag	Description
<u><html></u>	Defines an HTML document
<u><body></u>	Defines the document's body
<u><h1> to <h6></u>	Defines HTML headings
<u><hr /></u>	Defines a horizontal line
<u><!--></u>	Defines a comment

HTML Text Formatting

HTML Text Formatting Tags

Tag	Description
<u></u>	Defines bold text
<u><big></u>	Defines big text
<u></u>	Defines emphasized text
<u><i></u>	Defines italic text
<u><small></u>	Defines small text
<u></u>	Defines strong text
<u><sub></u>	Defines subscripted text
<u><sup></u>	Defines superscripted text
<u><ins></u>	Defines inserted text
<u></u>	Defines deleted text

```
<html>
<body>

<p><b>This text is bold</b></p>
<p><strong>This text is strong</strong></p>
<p><big>This text is big</big></p>
<p><i>This text is italic</i></p>
<p><em>This text is emphasized</em></p>
<p><code>This is computer output</code></p>
<p>This is<sub> subscript</sub> and <sup>superscript</sup></p>

</body>
</html>
```

This text is bold

This text is strong

This text is big

This text is italic

This text is emphasized

This is computer output

This is _{subscript} and ^{superscript}

HTML Links

- Links are found in nearly all Web pages. Links allow users to click their way from page to page.
 - **HTML Hyperlinks (Links)**
 - A hyperlink (or link) is a word, group of words, or image that you can click on to jump to a new document or a new section within the current document.
 - When you move the cursor over a link in a Web page, the arrow will turn into a little hand.
 - Links are specified in HTML using the `<a>` tag.
 - The `<a>` tag can be used in two ways:
 - To create a link to another document, by using the href attribute
 - To create a bookmark inside a document, by using the name attribute
-

- **HTML Link Syntax**

The HTML code for a link is simple. It looks like this:

```
<a href="url">Link text</a>
```

The href attribute specifies the destination of a link.

- **Example**

```
<a href="http://www.eepis-its.edu/">Visit EEPIS</a>
```

which will display like this: Visit EEPIS

Clicking on this hyperlink will send the user to EEPIS' homepage.

Tip: The "*Link text*" doesn't have to be text. It can be an image or any other HTML element.

- **HTML Links - The target Attribute**

The target attribute specifies where to open the linked document.

The example below will open the linked document in a new browser window or a new tab:

- **Example**

```
<a href="http://www.eepis-its.edu/" target="_blank">Visit EEPIS!</a>
```

- **HTML Links - The name Attribute**

The name attribute specifies the name of an anchor.

The name attribute is used to create a bookmark inside an HTML document.

- **Note:** The upcoming HTML5 standard suggests using the id attribute instead of the name attribute for specifying the name of an anchor. Using the id attribute actually works also for HTML4 in all modern browsers.
- Bookmarks are not displayed in any special way. They are invisible to the reader.

- **Example**

- A named anchor inside an HTML document:

```
<a name="tips">Useful Tips Section</a>
```

- Create a link to the "Useful Tips Section" inside the same document:

```
<a href="#tips">Visit the Useful Tips Section</a>
```

- Or, create a link to the "Useful Tips Section" from another page:

```
<a href="http://www.eepis-its.edu/htmlinks.htm#tips">  
Visit the Useful Tips Section</a>
```

HTML Links

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

```
<html>  
<body>
```

```
<a href="http://www.eepis-its.edu">  
This is a link to EEPIS website</a>
```

```
</body>  
</html>
```

[This is a link to EEPIS website](http://www.eepis-its.edu)

HTML Iframes

- An iframe is used to display a web page within a web page.

```
<body>
<iframe src="demo_iframe.htm" width="200" height="200"></iframe>
<p>Some older browsers don't support iframes.</p>
<p>If they don't, the iframe will not be visible.</p>

</body>
</html>
```

**This page is
displayed in
an iframe**

Some older browsers don't support iframes.

If they don't, the iframe will not be visible.

- **Syntax for adding an iframe:**

- `<iframe src="URL"></iframe>`
- The URL points to the location of the separate page.

- **Iframe - Set Height and Width**

- The height and width attributes are used to specify the height and width of the iframe.
- The attribute values are specified in pixels by default, but they can also be in percent (like "80%").

- **Iframe - Remove the Border**

- The frameborder attribute specifies whether or not to display a border around the iframe.
- Set the attribute value to "0" to remove the border:

- **Example**

```
<iframe src="demo_iframe.htm" frameborder="0"></iframe>
```

■ Use iframe as a Target for a Link

- ❑ An iframe can be used as the target frame for a link.
- ❑ The target attribute of a link must refer to the name attribute of the iframe:

```
<body>

<iframe src="demo_iframe.htm" name="iframe_a"></iframe>
<p><a href="http://www.eepis-its.edu" target="iframe_a">Link To EEPIS</a></p>

<p><b>Note:</b> Because the target of the link matches the name of the iframe, the
link will open in the iframe.</p>

</body>
</html>
```

**This page is
displayed in an
iframe**

[Link To EEPIS](http://www.eepis-its.edu)

Note: Because the target of the link matches the name of the iframe, the link will open in the iframe.

HTML Tables

Apples	44%
Bananas	23%
Oranges	13%
Other	10%

- Tables are defined with the <table> tag.
- A table is divided into rows (with the <tr> tag), and 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.

```
<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>
```

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

■ 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>
```

■ .

■ 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>
```

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

HTML Table Tags

Tag	Description
<code><table></code>	Defines a table
<code><th></code>	Defines a table header
<code><tr></code>	Defines a table row
<code><td></code>	Defines a table cell
<code><caption></code>	Defines a table caption
<code><colgroup></code>	Defines a group of columns in a table, for formatting
<code><col /></code>	Defines attribute values for one or more columns in a table
<code><thead></code>	Groups the header content in a table
<code><tbody></code>	Groups the body content in a table
<code><tfoot></code>	Groups the footer content in a table

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

- **HTML Unordered Lists**

- An unordered list starts with the `` tag. Each list item starts with the `` 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

■ HTML Ordered Lists

- An ordered list starts with the `` tag. Each list item starts with the `` 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

■ 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>
```

How the HTML code above looks in a browser:

Coffee
- black hot drink
Milk
- white cold drink

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

HTML List Tags

Tag	Description
<code></code>	Defines an ordered list
<code></code>	Defines an unordered list
<code></code>	Defines a list item
<code><dl></code>	Defines a definition list
<code><dt></code>	Defines an item in a definition list
<code><dd></code>	Defines a description of an item in a definition list

HTML Forms and Input

- HTML forms are used to pass data to a server.
- A form can contain input elements like text fields, checkboxes, radio-buttons, submit buttons and more. A form can also contain select lists, textarea, fieldset, legend, and label elements.
- The <form> tag is used to create an HTML form:

```
<form>  
.  
input elements  
.  
</form>
```

- **HTML Forms - The Input Element**
 - The most important form element is the input element.
 - The input element is used to select user information.
 - An input element can vary in many ways, depending on the type attribute. An input element can be of type text field, checkbox, password, radio button, submit button, and more.
-
- The most used input types are described below.

■ Text Fields

- `<input type="text" />` defines a one-line input field that a user can enter text into:
- **Note:** The form itself is not visible. Also note that the default width of a text field is 20 characters.

```
<form>
First name: <input type="text" name="firstname" /><br />
Last name: <input type="text" name="lastname" />
</form>
```

How the HTML code above looks in a browser:

First name:

Last name:

■ Password Field

- ❑ `<input type="password" />` defines a password field:
- ❑ **Note:** The characters in a password field are masked (shown as asterisks or circles).

```
<form>
Password: <input type="password" name="pwd" />
</form>
```

How the HTML code above looks in a browser:

Password:

■ Radio Buttons

- ❑ `<input type="radio" />` defines a radio button. Radio buttons let a user select **ONLY ONE** of a limited number of choices:

```
<form>
<input type="radio" name="sex" value="male" /> Male<br />
<input type="radio" name="sex" value="female" /> Female
</form>
```

How the HTML code above looks in a browser:

- Male
- Female

■ Checkboxes

- ❑ `<input type="checkbox" />` defines a checkbox. Checkboxes let a user select ZERO or MORE options of a limited number of choices.

```
<form>
<input type="checkbox" name="vehicle" value="Bike" /> I have a bike<br />
<input type="checkbox" name="vehicle" value="Car" /> I have a car
</form>
```

How the HTML code above looks in a browser:

- I have a bike
- I have a car

■ Submit Button

- ❑ `<input type="submit" />` defines a submit button.
- ❑ A submit button is used to send form data to a server. The data is sent to the page specified in the form's action attribute. The file defined in the action attribute usually does something with the received input:
- ❑ If you type some characters in the text field above, and click the "Submit" button, the browser will send your input to a page called "html_form_action.asp". The page will show you 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 the HTML code above looks in a browser:

Username:

HTML Images

```
<body>  
<h2>Norwegian Mountain Trip</h2>  
  
</body>  
</html>
```

Norwegian Mountain Trip



■ HTML Images - The Tag and the Src Attribute

- In HTML, images are defined with the tag.
- The tag is empty, which means that it contains attributes only, and has no closing tag.
- To display an image on a page, you need to use the src attribute. Src stands for "source". The value of the src attribute is the URL of the image you want to display.

■ Syntax for defining an image:

``

- The URL points to the location where the image is stored. An image named "pens.gif", located in the "images" directory on "www.eepis-its.edu" has the URL: <http://www.eepis-its.edu/images/boat.gif>.
- The browser displays the image where the tag occurs in the document.

If you put an image tag between two paragraphs, the browser shows the first paragraph, then the image, and then the second paragraph.

■ HTML Images - The Alt Attribute

- ❑ The required alt attribute specifies an alternate text for an image, if the image cannot be displayed.
- ❑ The value of the alt attribute is an author-defined text:
``
- ❑ The alt attribute provides alternative information for an image if a user for some reason cannot view it (because of slow connection, an error in the src attribute, or if the user uses a screen reader).

■ HTML Images - Set Height and Width of an Image

- ❑ The height and width attributes are used to specify the height and width of an image.
- ❑ The attribute values are specified in pixels by default:
``
- ❑ **Tip:** It is a good practice to specify both the height and width attributes for an image. If these attributes are set, the space required for the image is reserved when the page is loaded. However, without these attributes, the browser does not know the size of the image. The effect will be that the page layout will change during loading (while the images load).

HTML Images

- HTML images are defined with the tag.

```
<html>  
<body>  
  
  
  
</body>  
</html>
```



Finish

