

LECTURE 02: HYPERTEXT MARKUP LANGUAGE (HTML)

Web Programming



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HTML BASICS

HYPertext MARKUP LANGUAGE (HTML)

- describes the content and structure of information on a web page
- surrounds text content with opening and closing tags
- each tag's name is called an element
 - syntax: `<element> content </element>`
 - example: `<p>This is a paragraph</p>`
- most whitespace is insignificant in HTML
(it gets ignored or collapsed into a single space)

WHERE TO WRITE HTML CODE

- 1. Open Text Editor, (Notepad in case of Windows Operating System).
- 2. Type the HTML code in it.
- 3. Save the file with extension .html/.htm
- 4. To view the created HTML file in browser , double click on the file.

The <!DOCTYPE> Declaration

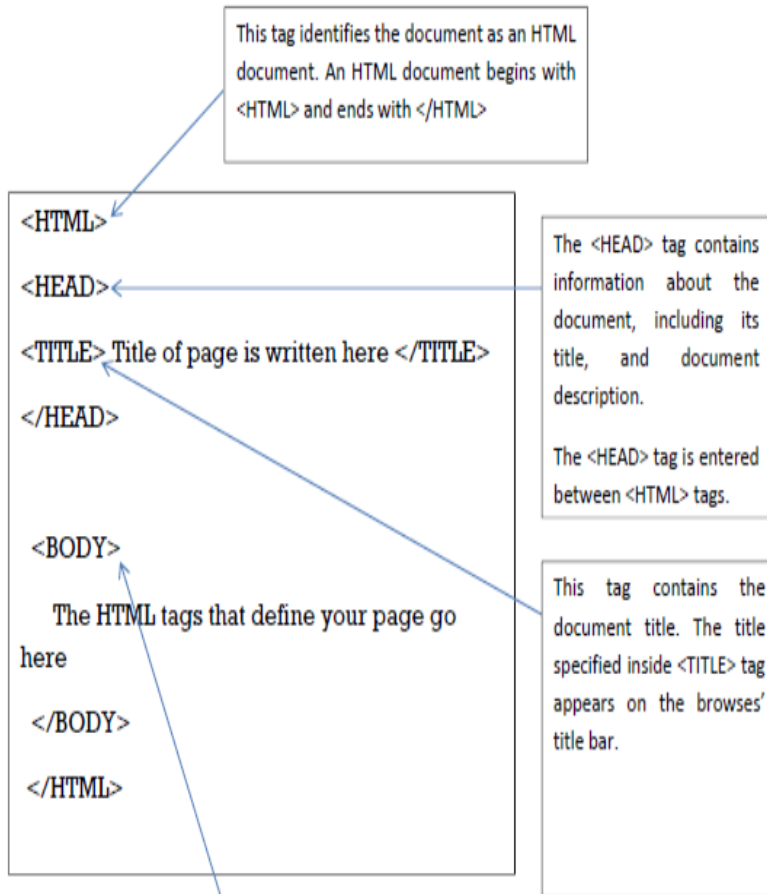
- The <!DOCTYPE> declaration must be the very first thing in your HTML document, before the <html> tag.
- The <!DOCTYPE> declaration is not an HTML tag; it is an instruction to the web browser about what version of HTML the page is written in.

HTML Version

Version	Year
Tim Berners-Lee invented www	1989
Tim Berners-Lee invented HTML	1991
Dave Raggett drafted HTML+	1993
HTML Working Group defined HTML 2.0	1995
W3C Recommended HTML 3.2	1997
W3C Recommended HTML 4.01	1999
W3C Recommended XHTML 1.0	2000
HTML5 WHATWG First Public Draft	2008
HTML5 WHATWG Living Standard	2012
HTML5 W3C Final Recommendation	2014

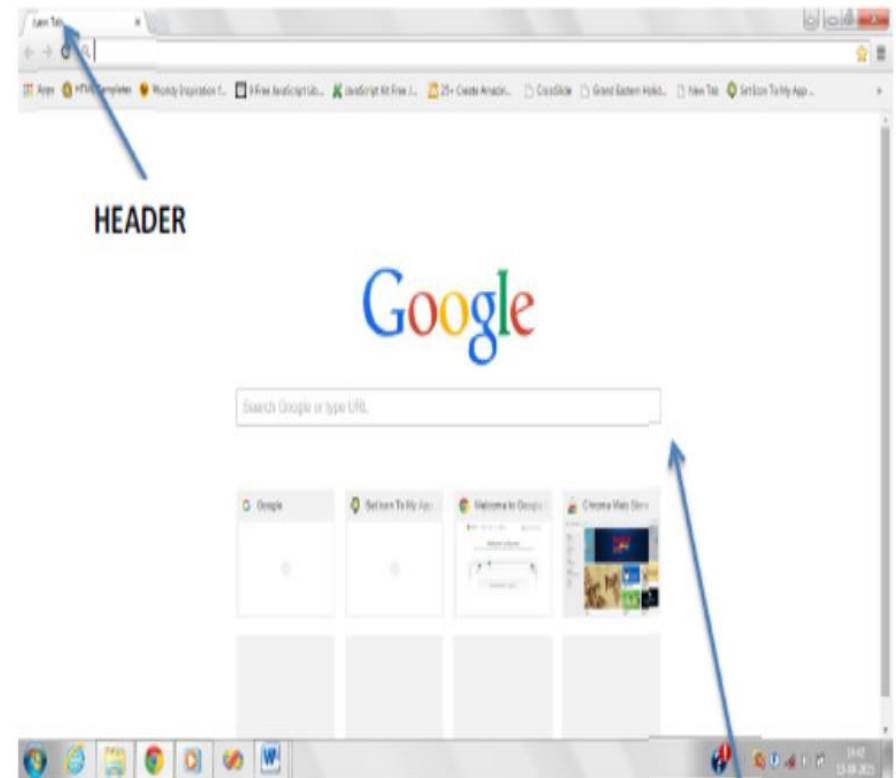
The Web Hypertext Application Technology Working Group (**WHATWG**) is a community of people interested in evolving HTML and related technologies.

Basic HTML Document



The `<BODY>` tag encloses all the tags, attributes and information to be displayed in the web page.

The `<BODY>` tag is entered below the closing `</HEAD>` tag and above the closing `<HTML>` tag.



BODY

HTML Document Structure

- A typical HTML document will have the following structure:
- Document declaration tag
- `<html>`
- `<head>`
- *Document header related tags*
- `</head>`
- `<body>`
- *Document body related tags*
- `</body>`
- `</html>`
- *We will study all the header and body tags in subsequent slides, but for now let's see what is document declaration tag.*

Heading Tags

- HTML uses six levels of “hheading level” tag pairs; the smaller the heading level number, the larger is the print size:
- **<H1>heading</H1>**: creates heading level #1 (24 point type—largest)
- **<H2>heading</H2>**: creates heading level #2 (18 point type)
- **<H3>heading</H3>**: creates heading level #3 (14 point type)
- **<H4>heading</H4>**: creates heading level #4 (12 point type)
- **<H5>heading</H5>**: creates heading level #5 (10 point type)
- **<H6>heading</H6>**: creates heading level #6 (8 point type—smallest)
A *line space* automatically is inserted before and after a heading (that is, an entire line is skipped between a heading and any text before and after it).

Line Break

- **Example**
- `<!DOCTYPE html>`
- `<html>`
- `<head>`
- `<title>Line Break Example</title>`
- `</head>`
- `<body>`
- `<p>Hello
`
- `You delivered your assignment on time.
`
- `Thanks
`
- `Mahnaz</p>`
- `</body>`
- `</html>`

Output

Hello
You delivered your assignment on time.
Thanks
Mahnaz

Paragraph Tag

- The `<p>` tag offers a way to structure your text into different paragraphs. Each paragraph of text should go in between an opening `<p>` and a closing `</p>` tag .

- **Example**

- `<!DOCTYPE html>`
- `<html>`
- `<head>`
- `<title>Paragraph Example</title>`
- `</head>`
- `<body>`
- `<p>Here is a first paragraph of text.</p>`
- `<p>Here is a second paragraph of text.</p>`
- `<p>Here is a third paragraph of text.</p>`
- `</body>`
- `</html>`

Output:

Here is a first paragraph of text.
Here is a second paragraph of text.
Here is a third paragraph of text.

Centering Content/ Horizontal Lines

- You can use **<center>** tag to put any content in the center of the page or any table cell.
- Horizontal lines are used to visually break-up sections of a document. The **<hr>** tag creates a line from the current position in the document to the right margin and breaks the line accordingly.

HTML ELEMENTS

- An **HTML element** is defined by a starting tag. If the element contains other content, it ends with a closing tag, where the element name is preceded by a forward slash as shown below with few tags

Start Tag	Content	End Tag
<p>	This is paragraph content.	</p>
<h1>	This is heading content.	</h1>
<div>	This is division content.	</div>

Nested HTML Elements

- It is very much allowed to keep one HTML element inside another HTML element:

- **Example**

- `<!DOCTYPE html>`
- `<html>`
- `<head>`
- `<title>Nested Elements Example</title>`
- `</head>`
- `<body>`
- `<h1>This is <i>italic</i> heading</h1>`
- `<p>This is <u>underlined</u> paragraph</p>`
- `</body>`
- `</html>`

- This will display the following result:

- **This is *italic* heading**
- This is underlined paragraph

HTML Formatting

- **Bold Text**
- Anything that appears within `...` element, is displayed in bold
- **Italic Text**
- Anything that appears within `<i>...</i>` element is displayed in italicized
- **Underlined Text**
- Anything that appears within `<u>...</u>` element, is displayed with underline
- **Strike Text**
- Anything that appears within `<strike>...</strike>` element is displayed with strikethrough, which is a thin line through the text
- **Superscript Text**
- The content of a `^{...}` element is written in superscript; the font size used is the same size as the characters surrounding it but is displayed half a character's height above the other characters.
- **Subscript Text**
- The content of a `_{...}` element is written in subscript; the font size used is the same as the characters surrounding it, but is displayed half a character's height beneath the other characters.

- **Inserted Text**
- Anything that appears within `<ins>...</ins>` element is displayed as inserted text.
- **Example**
- `<!DOCTYPE html>`
- `<html>`
- `<head>`
- `<title>Inserted Text Example</title>`
- `</head>`
- `<body>`
- `<p>I want to drink cola <ins>wine</ins></p>`
- `</body>`
- `</html>`
- *This will produce the following result:*

I want to drink ~~cola~~ wine

META tags

- **Meta tags** have two main functions
- To help list your site in some search engines indexes.
- As the web gets older this function does not have the same importance. In earlier times some Meta tags provided the information to search engines (crawlers) but now some search engines only treat this as a secondary means of listing your site on their index.
- *To add Meta tags*
- You add Meta tags within the **<head>** tags of your HTML document.
- Many HTML editors (such as **FrontPage**) automatically insert Meta tags for you or can be configured to do so.
- There are many different Meta tags you can include in your pages but the most important for maintaining an internal focus are;
- **keywords, description, maintainer and review.**

- **Description**
- The **description** Meta tag provides a summary of your page in the list of sites found.
- Some Search Engines will also use this Meta tag.
- *<Meta name="description" content="This site is for training staff">*
- *The description should be a brief and concise description of the page.*
- *Some important points.*
- *Don't make it too long because the search engines usually only allow a limited amount of text.*
- *Don't simply copy the description from the title page for each subsequent page you create – you should describe each page itself if you want an accurate listing.*
- *It's a good idea to also include a basic description of your site using the html comment tags for those search engines (such as Excite), which do not use Meta tags.*

- **`<html>`**
- **`<head> <title>Computer Training For UWS Staff</title>`**
- **`<!-- This site is for computer training for staff from UWS only-->`**
- **`<meta name="description" content= "This site is for computer training for staff from UWS only.">`**
- **`</head>`**
- There are Internal software programs that search for out-of-date pages and contact the owners to make sure they are updated.
- **Maintainer**
- The maintainer Meta tag provides the name of the person responsible for maintaining a page. You will be contacted by email when your site is due for review.
- **`<meta name="maintainer" content="Gordon Grant">`**
- **Review**
- UWS web sites use this tag so that when the 'review' date approaches, whoever is listed as the 'maintainer' is contacted by email and made aware that the information on the web page/s need to be reviewed.
- **`<meta name="review content= "Fri, 14 May 2003 23:59:59.">`**
- **Copyright**
- The copyright Meta tag is used to add an official copyright notice to your page.
- **`<meta name="copyright" content= "Copyright 2000. UWS IT">`**

Images in HTML

- ``
- The `` tag is an empty tag, which means that, it can contain only list of attributes and it has no closing tag.
- `<!DOCTYPE html>`
- `<html>`
- `<head>`
- `<title>Using Image in Webpage</title>`
- `</head>`
- `<body>`
- `<p>Simple Image Insert</p>`
- ``
- `</body>`
- `</html>`
- This will produce the following result:
- Simple Image Insert



- Set Image Width/Height
- **
- Set Image Border
- **
- Set Image Alignment
- **

Tables in HTML

- Here is a trivial table of two rows and two columns:
- `<table>`
- `<tr><td>New Mexico <td>Santa Fe`
- `<tr><td>Utah <td>Salt Lake City`
- `</table>`
- • The entire table is contained between `<table>` and `</table>` tags.
- Each table *row* starts with a `<tr>` tag.
- Each *cell* starts with a `<td>` tag. A cell is one column of one row.
- **Captioning a table**
- To add a title to a table, place the caption text between `<caption>` and `</caption>` tags just after the `<table>` tag:
- `<table>`
- `<caption>Southwestern Capitals</caption>`
- `<tr><td>New Mexico <td>Santa Fe`
- `<tr><td>Utah <td>Salt Lake City`
- `</table>`

Attributes of the <table> tag

- The <table> tag allows a number of optional attributes that specify the properties of the entire table.
- **<table align="left">** positions the table at the left side of the viewer window; **align="center"** centers it; and **align="right"** places it on the right side.
- The **width=" *dimension* "** attribute sets the width of the entire table; it is discussed above in the section on dimensions.
- **border=" *dimension* "** tells the browser to draw a border around the entire table. The *dimension* is optional and specifies how thick to make the border. For example: **<table border="5px">** specifies a five-pixel border around the table.

Lists in HTML

- HTML offers web authors three ways for specifying lists of information. All lists must contain one or more list elements. Lists may contain:
- **** - An unordered list. This will list items using plain bullets.
- **** - An ordered list. This will use different schemes of numbers to list your items.
- **<dl>** - A definition list. This arranges your items in the same way as they are arranged in a dictionary.

HTML Unordered Lists

- An unordered list is a collection of related items that have no special order or sequence.
- This list is created by using HTML `` tag. Each item in the list is marked with a bullet.

- **Example**

- `<!DOCTYPE html>`
- `<html>`
- `<head>`
- `<title>HTML Unordered List</title>`
- `</head>`
- `<body>`
- ``
- `Beetroot`
- `Ginger`
- `Potato`
- `Radish`
- ``
- `</body>`
- `</html>`
- This will produce the following result:

- **The type Attribute**

- You can use **type** attribute for `` tag to specify the type of bullet you like. By default, it is a disc. Following are the possible options:
- `<ul type="square">`
- `<ul type="disc">`
- `<ul type="circle">`

HTML Ordered Lists

- If you are required to put your items in a numbered list instead of bulleted, then HTML ordered list will be used. This list is created by using **** tag. The numbering starts at one and is incremented by one for each successive ordered list element tagged with ****.
- **The type Attribute**
- You can use **type** attribute for **** tag to specify the type of numbering you like. By default, it is a number. Following are the possible options:
 - **<ol type="1">** - Default-Case Numerals.
 - **<ol type="I">** - Upper-Case Numerals.
 - **<ol type="i">** - Lower-Case Numerals.
 - **<ol type="a">** - Lower-Case Letters.
 - **<ol type="A">** - Upper-Case Letters.

Links

- **Text Links**

- A webpage can contain various links that take you directly to other pages and even specific parts of a given page. These links are known as hyperlinks.
- Hyperlinks allow visitors to navigate between Web sites by clicking on words, phrases, and images.
- Thus you can create hyperlinks using text or images available on a webpage
- `Link Text`

- **Example**

- Let's try following example which links <http://www.tutorialspoint.com> at your page:
- `Tutorials Point`

- **The target Attribute**

- We have used **target** attribute in our previous example. This attribute is used to specify the location where linked document is opened. Following are possible options:

- **OptionDescription**

- `_blank` Opens the linked document in a new window or tab
- `_self` Opens the linked document in the same frame.
- `_parent` Opens the linked document in the parent frame.
- `_top` Opens the linked document in the full body of the window.
- `Targetframe` Opens the linked document in a named *targetframe*.

Links

- `Opens in New |`
- `Opens in Self |`
- `Opens in Parent |`
- `Opens in Body`
- This will produce following result, where you can click on different links to understand the difference between various options given for target attribute.
- Click any of the following links
- [Opens in New](#) | [Opens in Self](#) | [Opens in Parent](#) | [Opens in Body](#)

- **Linking to a Page Section**

- You can create a link to a particular section of a given webpage by using **name** attribute. This is a two step process.
- First create a link to the place where you want to reach with-in a webpage and name it using `<a...>` tag as follows:
- `<h1>HTML Text Links </h1>`
- Second step is to create a hyperlink to link the document and place where you want to reach:
- `Go to the Top`
- This will produce following link, where you can click on the link generated **Go to the Top** to reach to the top of the HTML Text Link tutorial.
- [Go to the Top](#)

- Setting Link Colors
- You can set colors of your links, active links and visited links using **link**, **alink** and **vlink** attributes of <body> tag.
- `<!DOCTYPE html>`
- `<html>`
- `<head>`
- `<title>Hyperlink Example</title>`
- `<base href="http://www.tutorialspoint.com/">`
- `</head>`
- `<body alink="#54A250" link="#040404" vlink="#F40633"> <p>Click following link</p>`
- `HTML Tutorial`
- `</body>`
- `</html>`
- This will produce following result. Just check color of the link before clicking on it, next check its color when you activate it and when the link has been visited.
- Click following link
- [HTML Tutorial](#)

Download Link/ Image Links

- You can create text link to make your PDF, or DOC or ZIP files downloadable. This is very simple, you just need to give complete URL of the downloadable file as follows:
- `Download PDF File`
- *It's simple to use an image as hyperlink. We just need to use an image inside hyperlink at the place of text as shown below:*
- ``
- ``
- ``

HTML Email Tag

- HTML `<a>` tag provides you option to specify an email address to send an email. While using `<a>` tag as an email tag, you will use **mailto: email address** along with *href* attribute. Following is the syntax of using **mailto** instead of using http.
- `Send Email`
- This code will generate the following link which you can use to send email.
- [Send Email](mailto:abc@example.com)