Client Side Technologies

HTML Basic Elements

ITI – Assiut Branch

Eng. Hany Saad

What is HTML ?

❑ **HTML (Hyper-text Markup Language):**

- o HTML is a language for describing web pages.

- o HTML is not a programming language, it is a markup language.

- o A markup language is a set of markup tags.

- o HTML uses markup tags to describe web pages.

- o HTML is **W3C Recommendation**.

- o HTML language isn't case- sensitive, and doesn't affect by spaces and line breaks.

- o HTML is Browser Dependant language.

HTML Versions

Version	Year
HTML	1991
HTML 2.0	1995
HTML 3.2	1997
HTML 4.01	1999
XHTML	2000
HTML5	2014

HTML Elements

o An HTML element usually consists of a **start tag and end tag**, with the content inserted in between: **<p>My first paragraph.</p>**

o HTML elements with no content are called empty elements. Empty elements do not have an end tag, such as the **
** element (which indicates a line break).

o HTML elements can be nested (elements contain elements):

```
<b>
    <i>
        <p> sample text</p>
    </i>
</b>
```

o HTML nested elements, should be properly nested.

o HTML tags are not case sensitive: <P> means the same as <p>.

o The HTML5 standard does not require lowercase tags, but W3C **recommends lowercase** in HTML elements, and demands lowercase for stricter document types like XHTML.

HTML Attributes

o   HTML Elements can have attributes.

o   Attributes provide additional information about HTML elements.

o   Attributes usually come in name/value pairs like: name="value"

o   **Example**: a title attribute is added to the <p> element. The value of the title attribute will be displayed as a tooltip when you mouse over the paragraph:

```
<p title="I'm a tooltip">
        This is a paragraph.
</p>
```

o   The HTML5 standard does not require lowercase attribute names.

o   W3C **recommends lowercase** in HTML attributes, and demands lowercase for stricter document types like XHTML.

o   The HTML5 standard does not require quotes around attribute values.

o   W3C **recommends quotes** in HTML attributes, and demands quotes for stricter document types like XHTML.

o   Double quotes around attribute values are the most common in HTML, but single quotes can also be used.

HTML Comments

o Comments are not displayed by the browser, but they can help document your HTML source code.

o **Html Comment:** `<!-- This is a comment -->`

o **Conditional Comments**: defines some HTML tags to be executed by specific browser only.

```
<!--[if IE 9]>
    .... some HTML here ....
<![endif]-->
```

HTML Entities

- **HTML Intities:**
  - Reserved characters in HTML must be replaced with character entities.
  - Like: White space, <, >, &.
  - To display reserved characters, we must use character entities in the HTML source code, like: **&Entity_Name;** or **&#Entity_Number;**
  - Note: Entity names are **case sensitive.**
  - Example:

    ```
    <p>text       text</p>  <!– text     text-->
    <p>text     text</p>  <!– text     text-->
    ```

  - HTML Entities and symbols entities reference:
    - http://www.w3schools.com/html/html_entities.asp
    - http://www.w3schools.com/html/html_symbols.asp

Some Other Useful HTML Character Entities

Result	Description	Entity Name	Entity Number
	non-breaking space		
<	less than	<	<
>	greater than	>	>
&	ampersand	&	&
"	double quotation mark	"	"
'	single quotation mark (apostrophe)	'	'
¢	cent	¢	¢
£	pound	£	£
¥	yen	¥	¥
€	euro	€	€
©	copyright	©	©
®	registered trademark	®	®

HTML URL Encoding

o A URL is another word for a web address.

o URL is Uniform Resource Locator.

o URLs can only be sent over the Internet using the ASCII character-set. If a URL contains characters outside the ASCII set, the URL has to be converted.

o URL encoding converts non-ASCII characters into a format that can be transmitted over the Internet.

o URL encoding replaces non-ASCII characters with a "%" followed by hexadecimal digits.

o URLs cannot contain spaces. URL encoding normally replaces a space with a plus (+) sign, or %20.

o URL encoding reference:
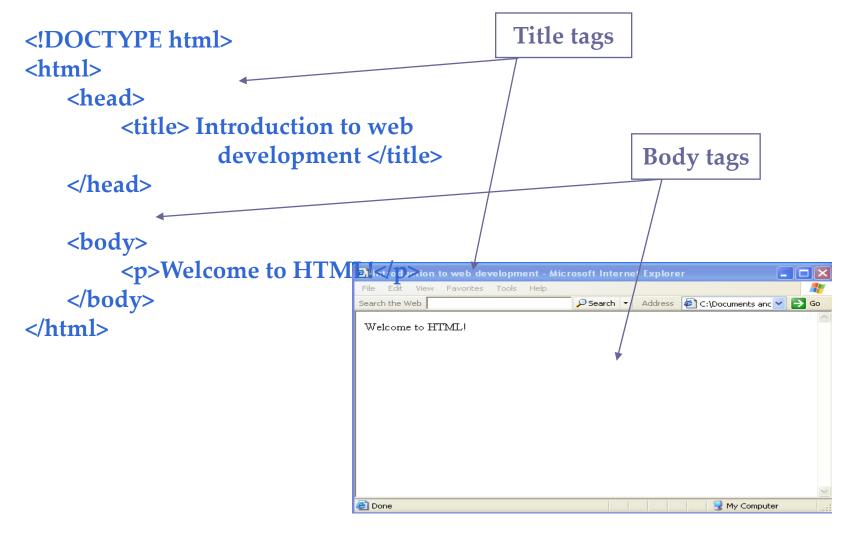   http://www.w3schools.com/tags/ref_urlencode.asp

HTML Colors

❑ **In HTML, a color can be specified by using a color name, an RGB value, or a HEX value.**

- **Color Name:** red, blue, yellow,…

- **RGB value:** using this formula: **rgb(red, green, blue)**, Each parameter (red, green, and blue) defines the intensity of the color between **0 and 255**. Example: rgb(255,0,0) is displayed as red, rgb(0,0,0) is black, and rgb(255,255,255) is white.

- **HEX Value**: a color can also be specified using a hexadecimal value in the form: **#RRGGBB**, where RR (red), GG (green) and BB (blue) are hexadecimal values **between 00 and FF**. Example: #FF0000 is displayed as red, because red is set to its highest value (FF) and the others are set to the lowest value (00).

Getting started…

❑ HTML Document structure

```
<!DOCTYPE html>
<html>
    <head>
        <title> Introduction to web
                development </title>
    </head>

    <body>
        <p>Welcome to HTML!</p>
    </body>
</html>
```

Title tags

Body tags

Introduction to web development - Microsoft Internet Explorer

File   Edit   View   Favorites   Tools   Help

Search the Web | | Search ▾ | Address 🅔 C:\Documents and ⌄ ➜ Go

Welcome to HTML!

🅔 Done   My Computer

Head Section…

❑ **Contains:**

  o **Title Tag:** Define Web Page's title

```
<head>
  <title>My page </title>
</head>
```

  o **Meta Tags:** used to store information usually relevant to browsers and search engines.

```
<head>
    <meta charset="UTF-8">
    <meta name="description" content="Free Web tutorials">
    <meta name="keywords" content="HTML,CSS,XML,JavaScript">
    <meta http-equiv="refresh" content="30;URL='http://www.iti.gov.eg/'">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <meta http-equiv="refresh" content="30;URL='http://www.iti.gov.eg/'">
</head>
```

  o More about meta tags: https://www.w3schools.com/tags/tag_meta.asp

1. Search engine result pages

Your title tag determines (with a few exceptions) your display title in SERPs, and is a search visitor's first experience of your site. Even if your site ranks well, a good title can be the make-or-break factor in determining whether or not someone clicks on your link.

Moz: SEO Software, Tools and Resources for Better Marketing
https://**moz**.com/ ▾
Backed by industry-leading data and the largest community of SEOs on the planet, **Moz** builds tools that make inbound marketing easy. Start your free trial today!

2. Web browsers

Your title tag is also displayed at the top of your web browser and acts as a placeholder, especially for people who have many browser tabs open. Unique and easily recognizable titles with important keywords near the front help ensure that people don't lose track of your content.

M Moz: SEO Software, Tool

← → C ⌂ | 🔒 Secure | https://moz.com | ☆

3. Social networks

Some external websites — especially social networks — will use your title tag to determine what to display when you share that page. Here's a screenshot from Facebook, for example:

Moz: SEO Software, Tools and Resources for Better Marketing

Backed by industry-leading data and the largest community of SEOs on the planet, Moz builds tools that make inbound marketing easy. Start your free trial today!

MOZ.COM

o More details: https://moz.com/learn/seo/title-tag

Examples

Example 1 - Define keywords for search engines:

```
<meta name="keywords" content="HTML, CSS, XML, XHTML, JavaScript">
```

Example 2 - Define a description of your web page:

```
<meta name="description" content="Free Web tutorials on HTML and CSS">
```

Example 3 - Define the author of a page:

```
<meta name="author" content="John Doe">
```

Example 4 - Refresh document every 30 seconds:

```
<meta http-equiv="refresh" content="30">
```

Example 5 - Setting the viewport to make your website look good on all devices:

```
<meta name="viewport" content="width=device-width, initial-scale=1.0">
```

Meta tags - Description

❑ **Meta descriptions:** are HTML attributes that provide concise summaries of webpages. They are between one sentence to a short paragraph and appear underneath the blue clickable links in a search engine results page (SERP). However, depending on a user's query, Google might pull meta description text from other areas on your page (in an attempt to better answer the searcher's query).

Meta description

Australian Shepherd Dog Breed Information and Pictures
www.dogbreedinfo.com/australianshepherd.htm ▾

All about the **Australian Shepherd**, info, pictures, breeders, rescues, care, temperament, health, puppy pictures and more.

Meta description example

Code sample

```
<head>
    <meta name="description" content="This is an example of a meta description. This will often show u
</head>
```

❑ **More Details:** https://moz.com/learn/seo/meta-description

Meta tags - Keywords

❏ **Meta Keywords:** to put keywords/phrases your target audience would type in the search box when looking for the subject of your web page.

❏ **Keywords Meta Tag Abuse:** when the list of keywords/key phrases are not related to the actual content within the web page.

❏ **Google Doesn't Use the Keywords Meta Tag in Web Search:** On September 22, 2009 Google officially stated on their Official Google Webmaster Central Blog that Google does not use the meta keywords data in your web pages for their web search analysis.

❏ **More Details:**
   http://www.webpagemistakes.ca/keywords-meta-tag/
   https://datadrivenlabs.io/blog/meta-keyword-tag-google-2018/
   https://moz.com/blog/seo-meta-tags

❑ HTML Charset:

- o To display an HTML page correctly, a web browser must know which character set (character encoding) to use.

- o ASCII was the first character encoding standard (also called character set). ASCII defined 127 different alphanumeric

- o ANSI (Windows-1252) was the original Windows character set, with support for 256 different character codes.

- o ISO-8859-1 was the default character set for HTML 4. This character set also supported 256 different character codes.

- o Because ANSI and ISO-8859-1 were so limited, the default character encoding was changed to UTF-8 in HTML5.

- o UTF-8 (Unicode) covers almost all of the characters and symbols in the world.

For HTML4:

```html
<meta http-equiv="Content-Type" content="text/html;charset=ISO-8859-1">
```

For HTML5:

```html
<meta charset="UTF-8">
```

Meta tags - Viewport

❑ **Meta Viewport:** Used to make your website looks good on all devices.

- The viewport is the user's visible area of a web page.
- The viewport varies with the device, and will be smaller on a mobile phone than on a computer screen.

```
1    <meta name="viewport" content="width=device-width, initial-scale=1">
```

❑ **More Details:**

https://www.w3schools.com/css/css_rwd_viewport.asp

https://developer.mozilla.org/en-US/docs/Mozilla/Mobile/Viewport_meta_tag

Meta tags and SEO (Self-study)

❑ **More about meta tags and SEO:**

- ❑ https://www.w3schools.com/tags/tag_meta.asp
- ❑ https://moz.com/blog/seo-meta-tags
- ❑ https://moz.com/beginners-guide-to-seo
- ❑ https://moz.com/learn/seo/on-site-seo
- ❑ https://moz.com/learn/seo/on-page-factors
- ❑ https://www.sitepoint.com/meta-tags-html-basics-best-practices

❑ **Meta tags for social media:**

- ❑ https://css-tricks.com/essential-meta-tags-social-media
- ❑ https://cypressnorth.com/social-media-advertising/how-to-customize-preview-thumbnail-images-for-pages-on-your-website

❑**How to set favicon for your page:**

https://tutorialehtml.com/en/what-is-favicon-ico-usage/

IMAGEN: Wikipedia Commons

Body Section…

```
<body bgcolor="Red" link="blue">
        <h1>hi</h1>
</body>
```

❑ All page content go inside the body section.

❑ Attributes of Body Tag (**All are deprecated attributes, use CSS instead**):

- o link
- o vlink
- o alink
- o Bgcolor
- o Background
- o Topmargin / leftmargin / bottommargin / rightmargin

❑ **According to the HTML5 standard; the <html>, the <body>, and the <head> tag can be omitted.**

❑ **Example:**

```
<!DOCTYPE html>
<title>Page Title</title>
<h1>This is a heading</h1>
<p>This is a paragraph.</p>
```

❑ **It's not recommend omitting the <html> and <body> tags.**

HTML Headings

o Headings are defined with the <h1> to <h6> tags.

o <h1> defines the most important heading (bigger font). <h6> defines the least important heading (smaller font).

o <h1> headings should be used for main headings, followed by <h2> headings, then the less important <h3>, and so on.

```
<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>
```

This is heading 1

This is heading 2

This is heading 3

This is heading 4

This is heading 5

This is heading 6

o Headings Are Important:
  o Search engines use the headings to index the structure and content of your web pages.
  o Users skim your pages by its headings. It is important to use headings to show the document structure.

HTML Text and Paragraphs

❑ **Paragraphs:**

  o The HTML **<p> element defines a paragraph: <p>** This is a paragraph.</p>

  o With HTML, you cannot change the output by adding extra spaces or extra lines in your HTML code. The browser will remove any extra spaces and extra lines when the page is displayed.

❑ **Line breaks:**

  o The HTML **
** element defines a line break.

  o Use <br> if you want a line break (a new line) without starting a new paragraph.

❑ **Preformatted text:**

  o The HTML **<pre> … </pre>** element defines preformatted text.

  o The text inside a <pre> element is displayed in a fixed-width font (usually Courier), and it preserves both spaces and line breaks:

HTML Blocks

- ❑ **HTML grouping (container) tags:**
  - ○ Often used as a container for other HTML elements.
  - ○ **<div>**   Defines a section in a document (block-level).
  - ○ **<span>**   Defines a section in a document (inline).
- ❑ **HTML Block and Inline Elements:**
  - ○ Every HTML element has a default display value depending on what type of element it is. The default display value for most elements is **block** or **inline**.
- ❑ **Block-level Elements:**
  - ○ A block-level element always 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>.**

HTML Text formatting

❑ Text Formatting elements:

text	writes text as bold
 text 	Important text
<i>text</i>	writes text in italics
 text 	Emphasized text
<u>text</u>	writes underlined text **(Deprecated)**
_{text}	lowers text and makes it smaller
^{text}	lifts text and makes it smaller
~~text~~	strikes a line through the text
text	Define Smaller text than the container.
<mark> text </mark>	Marked or highlighted text.
 text 	Defines font size, name and color **(Deprecated).**
<center>text</center>	Show the text on Center **(Deprecated).**

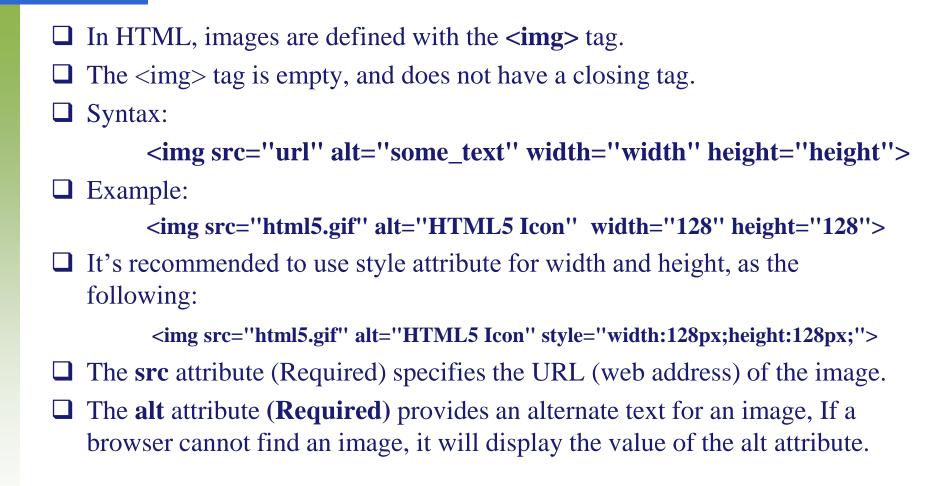# HTML Styles

❑ Setting the style of an HTML element, can be done with the **style** attribute.

❑ The HTML style attribute has the following syntax:
<tagname style="property:value;">

❑ The **property** is a CSS property, the **value** is a CSS value.

❑ Example:

```html
<body style="background-color:red;">
    <h1 style="color:blue;">This is a heading</h1>
    <h2 style="text-align:center;">Centered Heading</h2>
    <p style="font-family:courier; font-size:16">This is a paragraph.</p>
</body>
```

HTML Images

❑ In HTML, images are defined with the **\<img\>** tag.

❑ The \<img\> tag is empty, and does not have a closing tag.

❑ Syntax:

> **\<img src="url" alt="some_text" width="width" height="height"\>**

❑ Example:

> **\<img src="html5.gif" alt="HTML5 Icon" width="128" height="128"\>**

❑ It's recommended to use style attribute for width and height, as the following:

> **\<img src="html5.gif" alt="HTML5 Icon" style="width:128px;height:128px;"\>**

❑ The **src** attribute (Required) specifies the URL (web address) of the image.

❑ The **alt** attribute **(Required)** provides an alternate text for an image, If a browser cannot find an image, it will display the value of the alt attribute.

❑ **Alt text uses:**

1. Adding alternative text to photos is first and foremost a principle of web accessibility. Visually impaired users using screen readers will be read an alt attribute to better understand an on-page image.

2. Alt tags will be displayed in place of an image if an image file cannot be loaded.

3. Alt tags provide better image context/descriptions to search engine crawlers, helping them to index an image properly.

The highlighted text shows the alt text (alt attribute) of the image at left.

More: https://moz.com/learn/seo/alt-text

https://yoast.com/image-seo-alt-tag-and-title-tag-optimization/

❑ **Examples**:

```
<!-- Image from a website-->
        <img src="http://www.iti.gov.eg/logo.gif">
<!-- Local Image-->
        <img src="/images/logo.gif">
        <img src="logo.gif">
        <img src="../logo.gif">
<!-- Resizing Image-->
        <img src="logo.gif" width="60" height="60">
        <img src="logo.gif" width="50%" height="60%">
<!-- Alternative Text-->
        <img src="logo.gif" alt="image Not Found">
```

❑ Image map:

- o Use the <map> tag to define an image-map. An image-map is an image with clickable areas.
- o The <map> tag contains a number of <area> tags, that defines the clickable areas in the image-map

```html
<img src="planets.gif" alt="Planets" usemap="#planetmap"
style="width:145px;height:126px;">

<map name="planetmap">
  <area shape="rect" coords="0,0,82,126" alt="Sun" href="sun.htm">
  <area shape="circle" coords="90,58,3" alt="Mercury" href="mercur.htm">
  <area shape="circle" coords="124,58,8" alt="Venus" href="venus.htm">
</map>
```

HTML Links

❑ HTML links are hyperlinks. You can click on a link and jump to another document.

❑ In HTML, links are defined with the **<a>** tag**: link text **

❑ Link Colors in the Page (these body tag attributes are **deprecated**, and CSS should be used instead):

```
<body link="#C0C0C0" vlink="#808080" alink="#FF0000">
```

❑ The **href** attribute specifies the destination web address or local page (in the same website).

```
<a href="http://www.iti.gov.eg">ITI Website</a>
<a href="about.html">HTML Images</a>
```

❑ Create bookmarks (link to an area in the same page):

```
<!—First, define bookmark using id attribute -->
<h2 id="tips">Useful Tips Section</h2>
<!-- Then add link to it-->
<a href="#tips">Go to Page Top</a>
<!-- When you link to anchors on external pages use this syntax -->
<a href="http://www.iti.gov.eg/rules/rules.htm#Section_a">Rules - Section a </a>
```

❑ **Link Targets: The target attribute specifies where to open the linked document.**

- o **_blank** - Opens the linked document in a new window or tab
- o **_self** - Opens the linked document in the same window/tab as it was clicked (this is default)
- o **_parent** - Opens the linked document in the parent frame
- o **_top** - Opens the linked document in the full body of the window
- o **framename** - Opens the linked document in a named frame
- o Example:

```
<a href="http://www.iti.gov.eg" target="_blank">ITI Website</a>
```

HTML Links (Cont.)

❑ **Image Link:**

```
<a href="myfile.htm"><img src="rainbow.gif"></a>
```

❑ **Link to Email:**

```
<a href="mailto:email@hotmail.com">Send Mail</a>

<a href="mailto:email@hotmail.com?subject=Hello">Send Email</a>
```

HTML iframes

❑ **HTML iframe:**

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

○ An HTML iframe is defined with the **<iframe>** tag:
  <iframe src="URL"></iframe>

○ The **src** attribute specifies the URL (web address) of the inline frame page.

○ Use the **height** and **width** attributes to specify the size of the iframe.
  <iframe src="demo_iframe.htm" height="200" width="300"></iframe>

○ An iframe can be used as the target frame for a link.

```
<iframe src="demo_iframe.htm" name="iframe_a"></iframe>

<p>
  <a href="http://www.w3schools.com" target="iframe_a"> W3Schools.com </a>
</p>
```

HTML Lists

An Unordered List:

- Item
- Item
- Item
- Item

❑ Unordered lists

- o An unordered list starts with the <ul> tag.
  Each list item starts with the <li> tag.

```
<ul>
    <li>Networks Dept.</li>
    <li>Software Dept.</li>
    <li>Multimedia Dept.</li>
</ul>
```

- o The CSS list-style-type property is used to define the style of the list item marker: disc, circle, square, none.

```
<ul style="list-style-type:disc">
    <li>Networks Dept.</li>
    <li>Software Dept.</li>
    <li>Multimedia Dept.</li>
</ul>
```

HTML Lists (Cont.)

1. First item
2. Second item
3. Third item
4. Fourth item

❑ Ordered lists

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

```
<ol>
    <li>Networks Dept.</li>
    <li>Software Dept.</li>
    <li>Multimedia Dept.</li>
</ol>
```

- The **type** attribute of the \ tag, defines the type of the list item marker: type="1", type="A", type="a", type="I", type="i".

```
<ol type="1">
    <li>Networks Dept.</li>
    <li>Software Dept.</li>
    <li>Multimedia Dept.</li>
</ol>
```

❑ Nested Lists

    o   List items can contain new list, and other HTML elements, like images and links, etc.

```
<ul>
  <li>Coffee</li>
  <li>Tea
   <ul>
     <li>Black tea</li>
     <li>Green tea</li>
   </ul>
  </li>
  <li>Milk</li>
</ul>
```

Self Study

❑ Self Study Topics:

- What's XHTML?
- What are the new features of HTML5?
- What are search engines? And how it work?
- What's SEO?
- How to optimize your website for search engines?
- What are Back-links?
- What're meta tags? And what're its benefits and uses?
- What's page favicon? And how to set it?
- How to Play video in the page? (Video tag)
- How to Play sound in the page? (audio tag).
- Embed Flash Element in the Page.

Online References

❑ Online HTML references:

- www.w3schools.com

- www.echoecho.com

- www.quackit.com

- www.htmlcodetutorial.com

- www.htmlquick.com

- www.htmldog.com

- www.tutorialehtml.com/en/index.php

- http://www.tutorialspoint.com/html

- https://developer.mozilla.org/en-US/docs/Learn/Getting_started_with_the_web/HTML_basics

- https://developer.mozilla.org/en-US/docs/Learn/HTML

- https://developer.mozilla.org/en-US/docs/Web/HTML/Element

-

<Questions> **?** </Questions>

Thank You…