



Web Programming

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HTML Fundamentals

HTML 5



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```
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>Example</title>
5          <link rel="stylesheet" href="sty
6      </head>
7      <body>
8          <h1>
9              <a href="/">Header</a>
10         </h1>
11         <nav>
12             <a href="one/">One</a>
13             <a href="two/">Two</a>
14             <a href="three/">Three</a>
15         </nav>
```

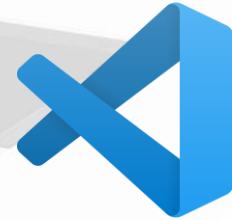
1. Hypertext Markup Language

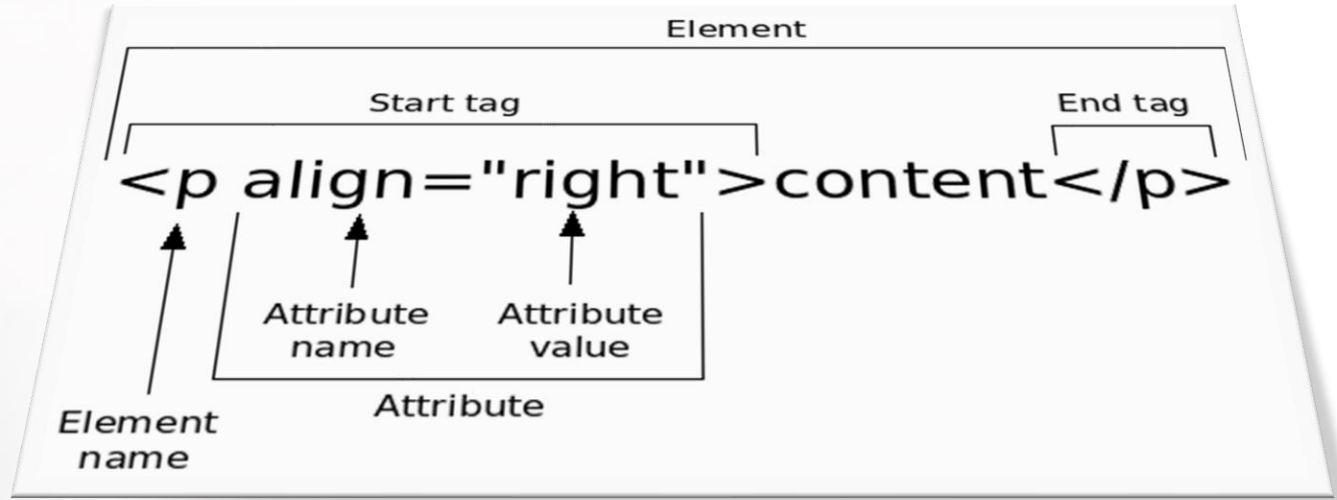
Hypertext Markup Language

- **HTML – HyperText Markup Language**
 - A **notation for describing**
 - ✓ document structure (semantic markup)
 - ✓ formatting (presentation markup)
 - Looks like:
A Microsoft Word document
- The markup tags **provide information** about the page content structure
- A **HTML** document **consists of many tags**

Creating HTML Pages

- An **HTML** document must have an **.htm** or **.html** file extension
- **HTML** files can be created with text editors:
 - Notepad / Notepad++
 - Sublime Text
 - Atom
 - Visual Studio Code
- Or **HTML** editors (WYSIWYG Editors):
 - Adobe Dreamweaver
 - Microsoft Visual Studio





2. HTML Terminology

Tags, Attributes and Elements

HTML Terminology

Concepts in **HTML**:

▪ **Tag**

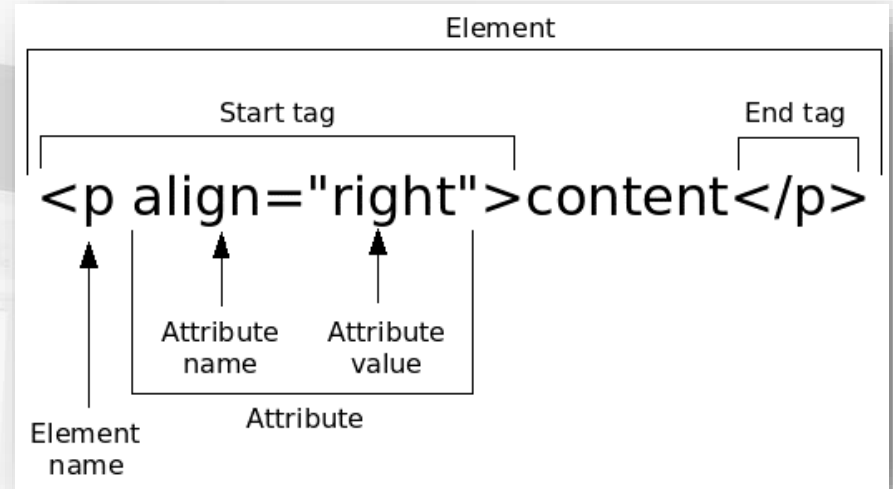
- Opening tag and closing tag
- The smallest piece in HTML

▪ **Attributes**

- Properties of the tag
- Size, color, etc.

▪ **Elements**

Combination of opening, closing tag and attributes



HTML Tag

- **Tag** is the **smallest piece** in HTML Document

Start with **<** and end with **>**

- Two kinds of tags

- **Opening**

Mark the start of an HTML element

- **Closing**

✓ Mark the end of an HTML element

✓ Starts with **</**

- **Note:** some tags do not have closing tag

```
<html>
  <body>
    <h1>Hello World!</h1>
  </body>
</html>
```

Attribute

Attribute are a **property of HTML Elements**

- Used to **set** size, color, border, etc.
- Put **directly in the tags**
- Has value surrounded by **single** ' ' or **double** " " quotes
The value is always a string

```
<!-- makes a hyperlink to Google -->  
<a href="https://google.com">Go to Google</a>
```

```
<!-- makes a horizontal line -->  
<hr width="95%" size="3px" />
```

```
<!-- adds an image in a web page -->  

```

Most Common Attributes

- There are some **common attributes** for every HTML element
 - **id**, e.g. id = "Footer"
 - **class**, e.g. class = "section-title text-center mb-3"
 - **name**, e.g. name = "FullName"
 - **style**, e.g. style = "color: blue; text-align: center;"
- Some attributes are **specific**

For example:

The attribute **src** of the **img** element

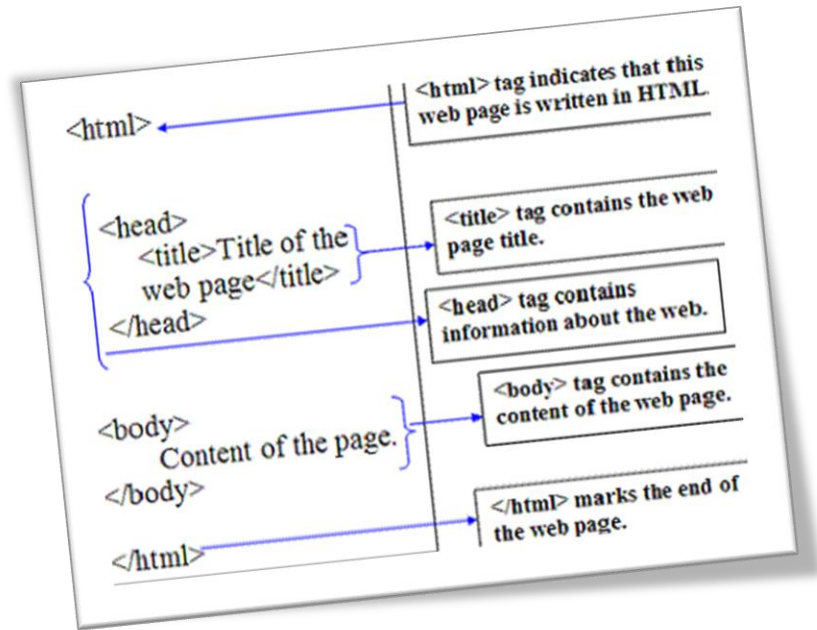
Shows the path to the image to be shown

HTML Element

HTML Element is **combination of tags and attributes**.

Opening tag with some or none attributes and a closing tag

```
<a href="https://google.com">Go to Google</a>  
<html>...</html>
```



3. HTML Document Structure

HTML Document, Doctype, Head, Body

HTML Document Structure

- Some elements are **essential** to each HTML Document:
html, head, body, doctype
- The **html** element
 - Used to **mark the beginning** and **ending** of a HTML document
 - All the content of the web page is inside this tag

```
<html>  
    <!-- Content goes here -->  
</html>
```

Head Element

- The **head** tag contains markup that is not visible to the user
But **helps the browser** to render correctly the HTML document
- **What is in there?**
 - Styles, scripts
 - Declare encodings
 - ...
 - The **title** tag - the text in the tab of a browser

Body Element and Doctype

- **body** element contains **all the visible markup to the user**
 - Headings, text, hyperlinks, images,...
 - Textboxes, sliders, buttons,...
- **Doctype** is kind of the validator of the page
 - **Tells the browser** in which version of HTML the page is written
 - HTML 5 Doctype

```
<!DOCTYPE html>
```


HTML Document Structure Template

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <title>Your web title</title>

    <link rel="icon" href="./images/fav.png" type="image/png">
    <!-- Your styles and scripts here -->
  </head>
  <body>
    <!-- Your code here -->
  </body>
</html>
```



DOCUMENT TAGS

<code><html>...</html></code>	The entire document
<code><head>...</head></code>	Document head
<code><body>...</body></code>	Document body
<code><title>...</title></code>	Document title

STYLE TAGS

<code><a>...</code>	Hyperlink
<code>...</code>	Bold text
<code>...</code>	Emphasized text
<code>...</code>	Changed font

4. HTML Common Elements

Used in 90% of all the sites

Text Formatting

Text formatting tags **modify the text** between the opening tag and the closing tag

- Example: `Hello` makes “**Hello**” bold
- Many of the formatting tags are deprecated

Use CSS instead

Text Formatting - Tags

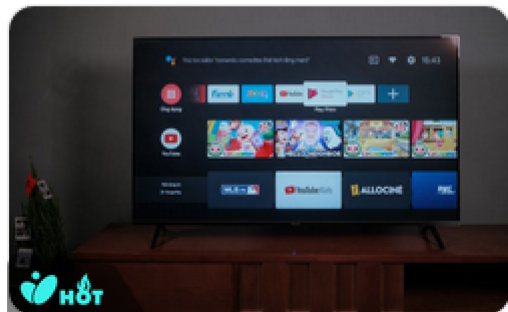
Tags	Meaning
<code></code>	
<code><i></i></code>	
<code><u></u></code>	
<code><sup></sup></code>	
<code><sub></sub></code>	
<code></code>	
<code></code>	

Text Formatting - Tags

Tags	Meaning
<code></code>	Bold
<code><i></i></code>	<i>Italicized</i>
<code><u></u></code>	<u>Underlined</u>
<code><sup></sup></code>	sample ^{superscript}
<code><sub></sub></code>	sample _{subscript}
<code></code>	Strong
<code></code>	<i>Emphasized</i>

How many element types are there?

Thông tin mới



Ba vấn đề về việc TV VSmart dùng tấm nền của LG Display (Phần 1)

Chào anh em Tinh Tế, hôm nay mình muốn mở một chủ đề thảo luận xoay quanh VinSmart KE8500, chiếc smart TV vừa ra mắt nhận được nhiều sự chú ý của anh em.



AmbitiousMan - 12 giờ trước - 15.367 xem

Some Simple Tags

- Hyperlink Tag

```
<a href="https://google.com" title="Google link">Go to Google</a>
```

- Image Tag

```

```

```

```

- Text formatting tags

This text is `emphasized.`

`
`new lin`
`

This one is `more emphasized.`

Headings and Paragraphs

- Heading Tags (h1 – h6)

```
<h1>Heading 1</h1>
```

```
<h2>Sub heading 2</h2>
```

```
<h3>Sub heading 3</h3>
```

- Paragraph Tags

```
<p>This is my first paragraph</p>
```

```
<p>This is my second paragraph</p>
```

- Sections: div and span

```
<div style="background: blue;">
```

```
  This is a div
```

```
</div>
```


What do we call the lists below?

LIST 1

1. Apple
2. Samsung
3. Nokia

LIST 3

HTML

A markup language...

CSS

Language used to...

LIST 2

- Apple
- Samsung
- Nokia

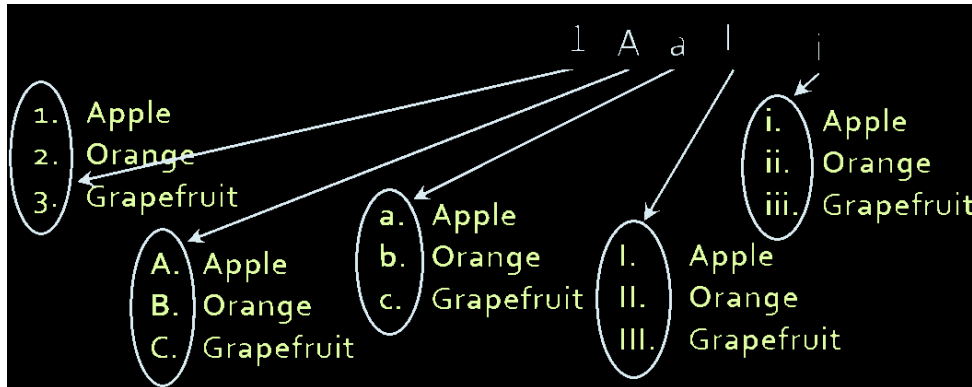
Ordered Lists: Tag

- Create an **Ordered List** using :

```
<ol type="1">  
  <li>Apple</li>  
  <li>Orange</li>  
  <li>Grapefruit</li>  
</ol>
```

← List Item

- Attribute values for **type** are 1, A, a, I, or i

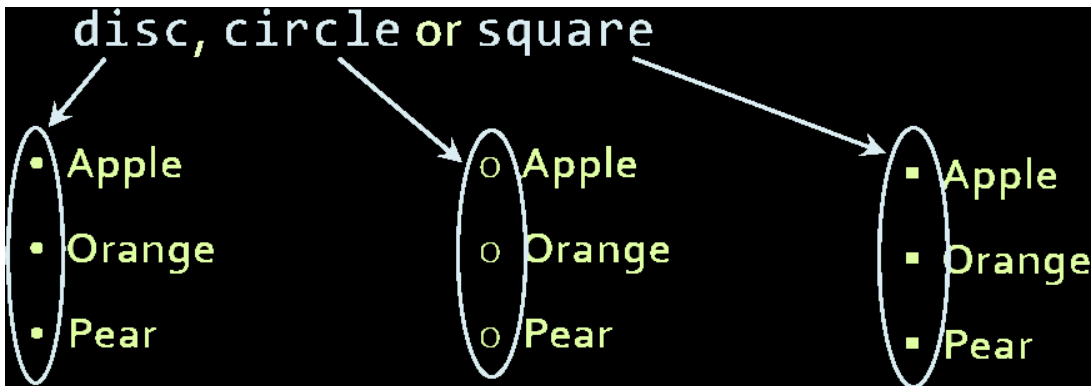


Unordered Lists: Tag

- Create an **Unordered List** using :

```
<ul type="disc">  
  <li>Apple</li>  
  <li>Orange</li>  
  <li>Grapefruit</li>  
</ul>
```

- Attribute values for **type** are: disc, circle or square



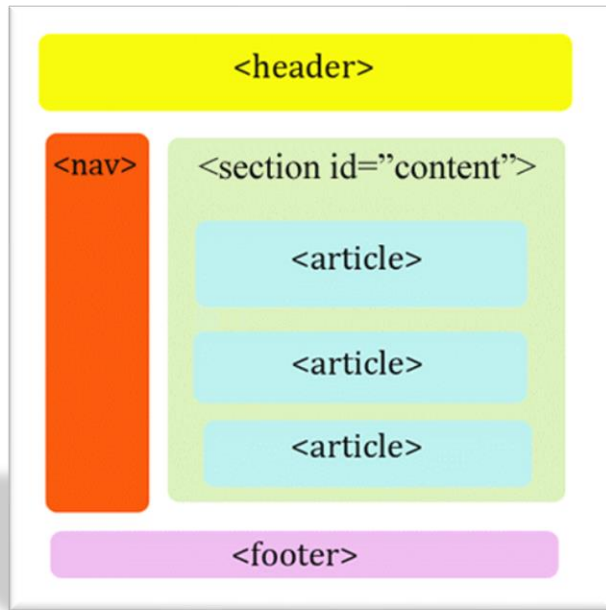
Definition lists: <dl> tag

Create **definition lists** using **<dl></dl>**

- Pairs of text and associated definition:
 - **text** is in <dt></dt> tag,
 - **definition** in <dd></dd> tag
- Renders **without bullets**
- Definition is **indented**

```
<dl>
  <dt>HTML</dt>
  <dd>A markup language ...</dd>

  <dt>CSS</dt>
  <dd>Language used to ...</dd>
</dl>
```



5. Section Elements

The `<div>` and the ``

The <div> Tag

- <div> creates logical **divisions** within a page
 - Block element
 - Used with CSS
- Example:

```
<div style="font-size: 24px; color: red">DIV example</div>  
<p>This one is  
  <span style="color: red; font-weight: bold">only a test</span>.  
</p>
```

The Tag

- **Inline style** element
- Useful for **modifying a specific portion** of text
Don't use it to create a separate area (paragraph)
in the document
- Mainly used to style parts of a text

This one is **only a test.**

This one is another **TEST.**

```
<p>This one is  
  <span style="color:red; font-weight:bold">only a test</span>.  
</p>  
<p>This one is another  
  <span style="font-size:32px; font-weight:bold">TEST</span>.  
</p>
```



6. Semantic Structural Tags

The Structure of a Web Page

A sample layout structure of a Web Page



Differences between HTML4 and HTML5

HTML4

div id = "header"

div id = "menu"

div id = "content"

div id =
"sidebar"

div id = "footer"

VS

HTML5

header

nav

section

aside

footer

The “HTML 4 and Before” Way

Using **divs** with **IDs**

```
<html>
<head>...</head>
<body>
  <div id="header">...</div>
  <div id="navigation">...</div>
  <div id="sidebar">...</div>
  <div id="content">...</div>
  <div id="footer">...</div>
</body>
</html>
```

The HTML5 Way

- In **HTML5** there are **semantic tags** for layout
 <nav>, <header>, <footer>, <main>
- Work only in **newer browsers**

```
<html>
<head>...</head>
<body>
    <header>...</header>
    <nav>...</nav>
    <aside>...</aside>
    <main>...</main>
    <footer>...</footer>
</body>
</html>
```

Remember

- It is important to have the **correct vision** and **attitude** towards HTML
 - **HTML is only about structure**, not appearance
 - Browsers **tolerate invalid HTML code** and parse errors – you should not
 - Always think about **semantics**
- The **W3C HTML Validator** is a way to validate HTML
<http://validator.w3.org/>


Summary

- HTML structure
- The common tag attributes: class, id, name, style
- Text Formatting tags: b, strong, i
- Structural tags: header, nav, main, section, aside, footer
- The common tags: a [href], img [src, alt, loading="lazy"], h1-h6, p, div, span, ul, ol, li
- All tags:
 - <https://www.w3schools.com/TAGs/default.asp>
 - <https://developer.mozilla.org/en-US/docs/Web/HTML/Element>

Exercise

Write the HTML tags of the Lani & Dani webpage.





Q&A