Understanding the HTML5 Doctype

- A Document Type Declaration, or DOCTYPE for short, is an instruction to the web browser about the version of markup language in which a web page is written.

- A DOCTYPE declaration appears at the top of a web page before all other elements.

- According to the HTML specification or standards, every HTML document requires a valid document type declaration to insure that your web pages are displayed the way they are intended to be displayed.
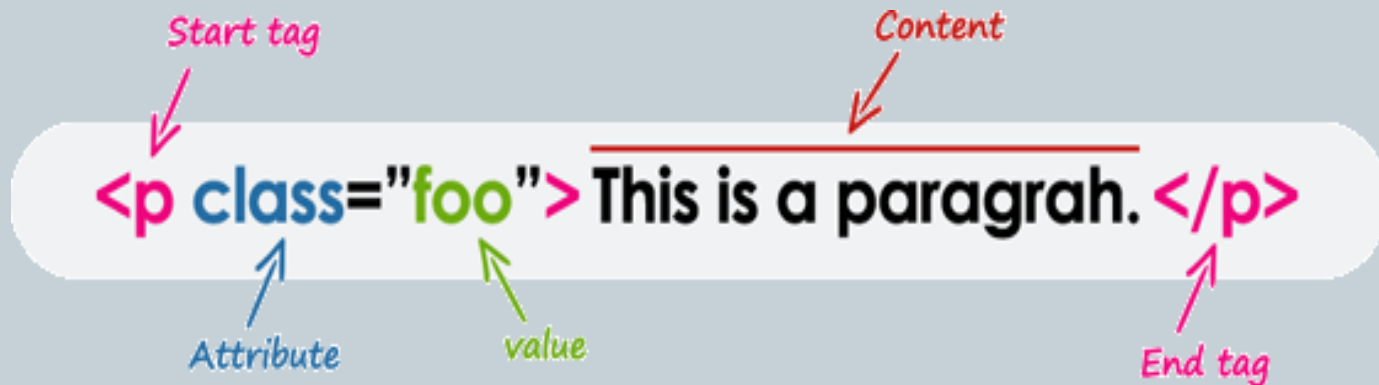
HTML Element Syntax

- An HTML element is an individual component of an HTML document.

- It represents semantics, or meaning. For example, the title element represents the title of the document.

- Most HTML elements are written with a *start tag* (or opening tag) and an *end tag* (or closing tag), with content in between.

HTML Element Syntax(contd.)

- Elements can also contain attributes that defines its additional properties.

- For example, a paragraph, which is represented by the p element, would be written as:

HTML Tags Vs Elements

- Technically, an HTML element is the collection of start tag, its attributes, an end tag and everything in between.

- On the other hand an HTML tag (either opening or closing) is used to mark the start or end of an element, as you can see in the illustration in previous slide.

- However, in common usage the terms HTML element and HTML tag are interchangeable

Case Insensitivity in HTML Tags and Attributes

- In HTML, tag and attribute names are not case-sensitive (but most attribute values are case-sensitive).

- It means the tag <P>, and the tag <p> defines the same thing in HTML which is a paragraph.

<p>This is a paragraph.</p>
<P>This is also a valid paragraph.</P>

Empty HTML Elements

- Empty elements (also called self-closing or void elements) are not container tags — that means, you can not write <hr>some content</hr> or
some content</br>.

- A typical example of an empty element, is the <br> element, which represents a line break. Some other common empty elements are <img>, <input>, <link>, <meta>, <hr>, etc.

<p>This paragraph contains <br> a line break.</p>
<img src="images/sky.jpg" alt="Cloudy Sky">
<input type="text" name="username">

Nesting HTML Elements

- Most HTML elements can contain any number of further elements (except empty elements), which are, in turn, made up of tags, attributes, and content or other elements.

- The following example shows some elements nested inside the <p> element.

<p>Here is some bold text.</p>
<p>Here is some emphasized text.</p>
<p>Here is some <mark>highlighted</mark> text.</p>

Nesting HTML Elements(contd.)

\<p>\These tags are nested properly.\\</p>

\<p>\These tags are not nested properly.\</p>\

Writing Comments in HTML

- Comments are usually added with the purpose of making the source code easier to understand.
- It may help other developer (or you in the future when you edit the source code) to understand what you were trying to do with the HTML.
- Comments are not displayed in the browser.

```html
<!-- This is an HTML comment -->
<!-- This is a multi-line HTML comment
    that spans across more than one line -->
<p>This is a normal piece of text.</p>
```

HTML Elements Types

- Elements can be placed in two distinct groups: block level and inline level elements. The former make up the document's structure, while the latter dress up the contents of a block.

- Also, a block element occupies 100% of the available width and it is rendered with a line break before and after. Whereas, an inline element will take up only as much space as it needs.

HTML Elements Types(contd.)

- The most commonly used block-level elements are <div>, <p>, <h1> through <h6>, <form>, <ol>, <ul>, <li>, and so on. Whereas, the commonly used inline-level elements are <img>, <a>, <span>, <strong>, <b>, <em>, <i>, <code>, <input>, <button>, etc.

HTML Attributes

- Attributes define additional characteristics or properties of the element such as width and height of an image.

- Attributes are always specified in the start tag (or opening tag) and usually consists of name/value pairs like name="value".

- Attribute values should always be enclosed in quotation marks.

HTML Attributes(contd.)

\<img src="images/smiley.png" width="30" height="30" alt="Smiley"\>

\<a href="https://www.google.com/" title="Search Engine"\>Google\</a\>

\<abbr title="Hyper Text Markup Language"\>HTML\</abbr\>

\<input type="text" value="John Doe"\>

HTML Headings

<h1>Heading level 1</h1>

<h2>Heading level 2</h2>

<h3>Heading level 3</h3>

<h4>Heading level 4</h4>

<h5>Heading level 5</h5>

<h6>Heading level 6</h6>

Formatting Text with HTML

```
<p>This is <b>bold text</b>.</p>
<p>This is <strong>strongly important text</strong>.</p>
<p>This is <i>italic text</i>.</p>
<p>This is <em>emphasized text</em>.</p>
<p>This is <mark>highlighted text</mark>.</p>
<p>This is <code>computer code</code>.</p>
<p>This is <small>smaller text</small>.</p>
<p>This is <sub>subscript</sub> and <sup>superscript</sup> text.</p>
<p>This is <del>deleted text</del>.</p>
<p>This is <ins>inserted text</ins>.</p>
```

Formatting Quotations

- Blockquotes are generally displayed with indented left and right margins, along with a little extra space added above and below.

```
<blockquote>
  <p>Learn from yesterday, live for today, hope for tomorrow. The important thing is not to stop questioning.</p>
  <cite>— Albert Einstein</cite>
</blockquote>
```

Showing Abbreviations

- You can use the <abbr> tag to denote an abbreviation

<p>The <abbr title="World Wide Web Consortium">W3C</abbr> is the main international standards organization for the <abbr title="World Wide Web">WWW or W3</abbr>. It was was founded by Tim Berners-Lee.</p>

Managing White Spaces

<p>This paragraph has multiple   spaces.</p>

<p>This paragraph has multiple

line

breaks.</p>

Defining Preformatted Text

- Sometimes, using , <br>, etc. for managing spaces isn't very convenient.

- Alternatively, you can use the <pre> tag to display spaces, tabs, line breaks, etc. exactly as written in the HTML file.

- It is very helpful in presenting text where spaces and line breaks are important like poem or code.

```
<pre>
    Twinkle, twinkle, little star,
    How I wonder what you are!
    Up above the world so high,
    Like a diamond in the sky.
</pre>
```

Creating Links in HTML

- A link or hyperlink is a connection from one web resource to another.

- Links allow users to move seamlessly from one page to another, on any server anywhere in the world.

- A link has two ends, called anchors. The link starts at the source anchor and points to the destination anchor, which may be any web resource, for example, an image, an audio or video clip, a PDF file, an HTML document or an element within the document itself, and so on.

Google Search

Working with Image Maps

- An image map allows you to define hotspots on an image that acts just like a hyperlink.

- The basic idea behind creating image map is to provide an easy way of linking various parts of an image without dividing it into separate image files.

- For example, a map of the world may have each country hyperlinked to further information about that country.

- The HTML <map> tag defines an image map.

Working with Image Maps(contd.)

- The image is inserted using the <img> tag. The only difference from other images is that you must add a usemap attribute

Creating Tables in HTML

- HTML table allows you to arrange data into rows and columns.

- They are commonly used to display tabular data like product listings, customer's details, financial reports, and so on.

- You can create a table using the <table> element. Inside the <table> element, you can use the <tr> elements to create rows, and to create columns inside a row you can use the <td> elements. You can also define a cell as a header for a group of table cells using the <th> element.

Working with HTML Lists

- HTML lists are used to present list of information in well formed and semantic way. There are three different types of list in HTML and each one has a specific purpose and meaning.

- **Unordered list** — Used to create a list of related items, in no particular order.

- **Ordered list** — Used to create a list of related items, in a specific order.

- **Description list** — Used to create a list of terms and their descriptions.

HTML Forms

- HTML Forms are required to collect different kinds of user inputs, such as contact details like name, email address, phone numbers, or details like credit card information, etc.
- The most frequently used input types are described below.

 - Text fields

 - Password fields

 - Radio buttons

 - Checkboxes

 - file

 - Textarea

 - select box

 - submit button and reset button

Grouping Form Controls

- You also group logically related controls and labels within a web form using the <legend> element.

- Grouping form controls into categories makes it easier for users to locate a control which makes the form more user-friendly.

HTML 5 new input elements

- color
- date
- datetime-local
- email
- month
- number
- range
- search
- tel
- time
- url
- week

HTML 5 audio

- Using the HTML5 audio Element
- Using the object Element
- Using the embed Element

HTML 5 video

- Using the HTML5 video Element
- Using the object Element
- Using the embed Element
- Embedding the YouTube Videos