

# **Web Engineering**

## **Lecture 10**

### **HTML Elements & Attributes**

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# HTML Elements

An HTML element usually consists of a **start** tag and **end** tag, with the content inserted in between:

`<tagname>Content goes here...</tagname>`

The HTML **element** is everything from the start tag to the end tag:

`<p>My first paragraph.</p>`

Start tag	Element content	End tag
<code>&lt;h1&gt;</code>	My First Heading	<code>&lt;/h1&gt;</code>
<code>&lt;p&gt;</code>	My first paragraph.	<code>&lt;/p&gt;</code>
<code>&lt;br&gt;</code>		

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

# Nested HTML Elements

HTML elements can be nested (elements can contain elements).

All HTML documents consist of nested HTML elements.

This example contains four HTML elements:

```
<!DOCTYPE html>
<html>
<body>

<h1>My First Heading</h1>
<p>My first paragraph.</p>

</body>
</html>
```

## My First Heading

My first paragraph.

The `<html>` element defines the **whole document**.

It has a **start** tag `<html>` and an **end** tag `</html>`.

The element **content** is another HTML element (the `<body>` element).

```
<html>
<body>

<h1>My First Heading</h1>
<p>My first paragraph.</p>

</body>
</html>
```

The `<body>` element defines the **document body**.

It has a **start** tag `<body>` and an **end** tag `</body>`.

The element **content** is two other HTML elements (`<h1>` and `<p>`).

```
<body>

<h1>My First Heading</h1>
<p>My first paragraph.</p>

</body>
```

The `<h1>` element defines a **heading**.

It has a **start** tag `<h1>` and an **end** tag `</h1>`.

The element **content** is: My First Heading.

```
<h1>My First Heading</h1>
```

The `<p>` element defines a **paragraph**.

It has a **start** tag `<p>` and an **end** tag `</p>`.

The element **content** is: My first paragraph.

```
<p>My first paragraph.</p>
```

## Use Lowercase Tags

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

# Empty HTML Elements

HTML elements with no content are called empty elements.

`<br>` is an empty element without a closing tag (the `<br>` tag defines a line break):

```
<!DOCTYPE html>
<html>
<body>

<p>This is a <br> paragraph with a line break.</p>

</body>
</html>
```

This is a  
paragraph with a line break.

# HTML Attributes

Attributes provide additional information about HTML elements.

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## HTML Attributes

- All HTML elements can have **attributes**
  - Attributes provide **additional information** about an element
  - Attributes are always specified in **the start tag**
  - Attributes usually come in name/value pairs like: **name="value"**
-

# The href Attribute

HTML links are defined with the `<a>` tag. The link address is specified in the `href` attribute:

```
<!DOCTYPE html>
<html>
<body>

<h2>The href Attribute</h2>
<p>HTML links are defined with the a tag. The link address is specified in the href
attribute:</p>

<a href="https://www.hu.edu.pk">This is a link</a>

</body>
</html>
```

## The href Attribute

HTML links are defined with the a tag. The link address is specified in the href attribute:

[This is a link](https://www.hu.edu.pk)



# The src Attribute

HTML images are defined with the `<img>` tag.

The filename of the image source is specified in the `src` attribute:

```
<!DOCTYPE html>
<html>
<body>

<h2>The src Attribute</h2>
<p>HTML images are defined with the img tag, and the filename of the image source is
specified in the src attribute:</p>



</body>
</html>
```

## The src Attribute

HTML images are defined with the img tag, and the filename of the image source is specified in the src attribute:



# The width and height Attributes

Images in HTML have a set of **size** attributes, which specifies the width and height of the image:

```
<!DOCTYPE html>
<html>
<body>

<h2>Size Attributes</h2>
<p>Images in HTML have a set of size attributes,
which specifies the width and height of the image:</p>



</body>
</html>
```

## Size Attributes

Images in HTML have a set of size attributes, which specifies the width and height of the image:



# The alt Attribute

The `alt` attribute specifies an alternative text to be used, when an image cannot be displayed.

The value of the attribute can be read by screen readers. This way, someone "listening" to the webpage, e.g. a vision impaired person, can "hear" the element.

The `alt` attribute is also useful if the image does not exist:

```
<!DOCTYPE html>
<html>
<body>


<h2>The alt Attribute</h2>
<p>The alt attribute should reflect the image content, so users who cannot see the image
gets an understanding of what the image contains:</p>



</body>
</html>
```

## The alt Attribute

The alt attribute should reflect the image content, so users who cannot see the image gets an understanding of what the image contains:

 HU Logo

# The style Attribute

The `style` attribute is used to specify the styling of an element, like color, font, size etc.

```
<!DOCTYPE html>
<html>
<body>

<h2>The style Attribute</h2>
<p>The style attribute is used to specify the styling of an element, like color:</p>

<p style="color:red">It is a paragraph.</p>

</body>
</html>
```

## The style Attribute

The style attribute is used to specify the styling of an element, like color:

It is a paragraph.

# The lang Attribute

The language of the document can be declared in the `<html>` tag.

The language is declared with the `lang` attribute.

Declaring a language is important for accessibility applications (screen readers) and search engines:

```
<!DOCTYPE html>
<html lang="en-US">
<body>

...

</body>
</html>
```

The first two letters specify the language (en). If there is a dialect, use two more letters (US).

## The title Attribute

Here, 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:

```
<!DOCTYPE html>
<html>
<body>

<h2 title="This is header">The title Attribute</h2>

<p title="This is paragraph">
Mouse over this paragraph, to display the title attribute as a tooltip.
</p>

</body>
</html>
```

## The title Attribute

Mouse over this paragraph, to display the title attribute as a tooltip.

This is paragraph

# Single or Double Quotes?

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

In some situations, when the attribute value itself contains double quotes, it is necessary to use single quotes:

```
<p title='John "ShotGun" Nelson'>
```

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<h2>Single or Double Quotes?</h2>
```

```
<p>In some situations, when the attribute value itself contains double quotes, it is necessary to use single quotes:</p>
```

```
<p>Move your mouse over the paragraphs below to see the effect:</p>
```

```
<p title='John "ShotGun" Nelson'>John with double quotes</p>
```

```
<p title="John 'ShotGun' Nelson">John with single quotes</p>
```

```
</body>
```

```
</html>
```

## Single or Double Quotes?

In some situations, when the attribute value itself contains double quotes, it is necessary to use single quotes:

Move your mouse over the paragraphs below to see the effect:

John with double quotes

John with single quotes

John 'ShotGun' Nelson

# HTML Attributes

Below is an alphabetical list of some attributes often used in HTML,

Attribute	Description
alt	Specifies an alternative text for an image, when the image cannot be displayed
disabled	Specifies that an input element should be disabled
href	Specifies the URL (web address) for a link
id	Specifies a unique id for an element
src	Specifies the URL (web address) for an image
style	Specifies an inline CSS style for an element
title	Specifies extra information about an element (displayed as a tool tip)