Part 2

Grouping Content

The ** ** and **** elements allow you to group together several elements to create sections or subsections of a page.

For example, you might want to put all of the footnotes on a page within a element to indicate that all of the elements within that element relate to the footnotes. You might then attach a style to this element so that they appear using a special set of style rules.

```
<body>
  <div id = "menu" align = "middle" >
    <a href = "/index.htm">HOME</a> |
    <a href = "/about/contact_us.htm">CONTACT</a> |
    <a href = "/about/index.htm">ABOUT</a>
  </div>
  <div id = "content" align = "left" >
    <h5>Content Articles</h5>
    <p>Actual content goes here.....</p>
  </div>   </body>
```

This will produce the following result –

HOME | CONTACT | ABOUT

Content Articles

Actual content goes here.....

The element, on the other hand, can be used to group inline elements only. So, if you have a part of a sentence or paragraph which you want to group together, you could use the element as follows.

```
<body>
    <p>This is the example of <span style = "color:green">span tag</span>
      and the <span style = "color:red">div tag</span> alongwith CSS</p>
</body>
```

This will produce the following result –

This is the example of span tag and the div tag alongwith CSS

These tags are commonly used with CSS to allow you to attach a style to a section of a page.

HTML - Attributes

We have seen few HTML tags and their usage like heading tags **<h1>, <h2>,** paragraph tag **<p>** and other tags. We used them so far in their simplest form, but most of the HTML tags can also have attributes, which are extra bits of information.

An attribute is used to define the characteristics of an HTML element and is placed inside the element's opening tag. All attributes are made up of two parts − a **name** and a **value**

- The **name** is the property you want to set. For example, the paragraph **<p>** element in the example carries an attribute whose name is **align**, which you can use to indicate the alignment of paragraph on the page.
- The **value** is what you want the value of the property to be set and always put within quotations. The below example shows three possible values of align attribute: **left, center** and **right**.

```
<body>
  <p align = "left">This is left aligned</p>
  <p align = "center">This is center aligned</p>
  <p align = "right">This is right aligned</p>
</body>
```

This will display the following result –

This is left aligned

This is center aligned

This is right aligned

Core Attributes

The four core attributes that can be used on the majority of HTML elements (although not all) are −

- Id
- Title
- Class
- Style

The Id Attribute

The **id** attribute of an HTML tag can be used to uniquely identify any element within an HTML page. There are two primary reasons that you might want to use an id attribute on an element −

- If an element carries an id attribute as a unique identifier, it is possible to identify just that element and its content.
- If you have two elements of the same name within a Web page (or style sheet), you can use the id attribute to distinguish between elements that have the same name.

We will discuss style sheet in separate tutorial. For now, let's use the id attribute to distinguish between two paragraph elements as shown below.

Example

```
<p id = "html">This para explains what is HTML</p>
<p id = "css">This para explains what is Cascading Style Sheet</p>
```

The title Attribute

The **title** attribute gives a suggested title for the element. They syntax for the **title** attribute is similar as explained for **id** attribute −

The behavior of this attribute will depend upon the element that carries it, although it is often displayed as a tooltip when cursor comes over the element or while the element is loading.

```
<!DOCTYPE html>
<html>
  <head>
    <title>The title Attribute Example</title>
  </head>
  <body>
    <h3 title = "Hello HTML!">Titled Heading Tag Example</h3>
  </body>
</html>
```

This will produce the following result –

Titled Heading Tag Example

Now try to bring your cursor over "Titled Heading Tag Example" and you will see that whatever title you used in your code is coming out as a tooltip of the cursor.

The class Attribute

The **class** attribute is used to associate an element with a style sheet, and specifies the class of element. You will learn more about the use of the class attribute when you will learn Cascading Style Sheet (CSS). So for now you can avoid it.

The value of the attribute may also be a space-separated list of class names. For example −

```
class = "className1 className2 className3"
```

The style Attribute

The style attribute allows you to specify Cascading Style Sheet (CSS) rules within the element.

```
<body>
    <p style = "font-family:arial; color:#FF0000;">Some text...</p>
  </body>
```

This will produce the following result –

Some text...

At this point of time, we are not learning CSS, so just let's proceed without bothering much about CSS. Here, you need to understand what are HTML attributes and how they can be used while formatting content.

HTML - Images

Images are very important to beautify as well as to depict many complex concepts in simple way on your web page. This tutorial will take you through simple steps to use images in your web pages.

Insert Image

You can insert any image in your web page by using **<img>** tag. Following is the simple syntax to use this tag.

The <img> tag is an empty tag, which means that, it can contain only list of attributes and it has no closing tag.

Example

To try following example, let's keep our HTML file test.htm and image file test.png in the same directory −

```
<body>
   <p>Simple Image Insert</p>
   <img src = "/html/images/test.png" alt = "Test Image" />
</body>
```

You can use PNG, JPEG or GIF image file based on your comfort but make sure you specify correct image file name in **src** attribute. Image name is always case sensitive.

The **alt** attribute is a mandatory attribute which specifies an alternate text for an image, if the image cannot be displayed.

Set Image Location

Usually we keep all the images in a separate directory. So let's keep HTML file test.htm in our home directory and create a subdirectory **images** inside the home directory where we will keep our image test.png.

Assuming our image location is "image/test.png", try the following example −

```
<body>
   <p>Simple Image Insert</p>
   <img src = "/html/images/test.png" alt = "Test Image" />  </body>
```

Set Image Width/Height

You can set image width and height based on your requirement using **width** and **height** attributes. You can specify width and height of the image in terms of either pixels or percentage of its actual size.

```
<body>
   <p>Setting image width and height</p>
   <img src = "/html/images/test.png" alt = "Test Image" width = "150" height = "100"/>
</body>
```

Set Image Border

By default, image will have a border around it, you can specify border thickness in terms of pixels using border attribute. A thickness of 0 means, no border around the picture.

```
<body>
   <p>Setting image Border</p>
   <img src = "/html/images/test.png" alt = "Test Image" border = "3"/>
</body>
```

Set Image Alignment

By default, image will align at the left side of the page, but you can use **align** attribute to set it in the center or right.

```
<body>
   <p>Setting image Alignment</p>
   <img src = "/html/images/test.png" alt = "Test Image" border = "3" align = "right"/>
</body>
```

For Free Web Graphics including patterns you can look into Free Web Graphics.

HTML - Lists

HTML offers web authors three ways for specifying lists of information. All lists must contain one or more list elements. Lists may contain −

- **<ul>** − An unordered list. This will list items using plain bullets.
- **<ol>** − 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 **<ul>** tag. Each item in the list is marked with a bullet.

```
<body>
  <ul>
    <li>Beetroot</li>
    <li>Ginger</li>
    <li>Potato</li>
    <li>Radish</li>
  </ul>
</body>
```

The type Attribute

You can use **type** attribute for <ul> 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">

```
<body>
  <ul type = "square">
    <li>Beetroot</li>
    <li>Ginger</li>
    <li>Potato</li>
    <li>Radish</li>
  </ul>
  <ul type = "disc">
    <li>Beetroot</li>
    <li>Ginger</li>
    <li>Potato</li>
    <li>Radish</li>
  </ul>
  <ul type = "circle">
    <li>Beetroot</li>
    <li>Ginger</li>
    <li>Potato</li>
    <li>Radish</li>
  </ul>

</body>
```

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 **<ol>** tag. The numbering starts at one and is incremented by one for each successive ordered list element tagged with <li>.

```
<body>
  <ol>
    <li>Beetroot</li>
    <li>Ginger</li>
    <li>Potato</li>
    <li>Radish</li>
  </ol>
</body>
</html>
```

The type Attribute

You can use **type** attribute for <ol> 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"> - Upper-Case Letters.
<ol type = "a"> - Lower-Case Letters.

```
<!DOCTYPE html>
<html>
  <head>
    <title>HTML Ordered List</title>
  </head>
  <body>
    <ol type = "1">
      <li>Beetroot</li>
      <li>Ginger</li>
      <li>Potato</li>
      <li>Radish</li>
    </ol>
    <ol type = "I">
      <li>Beetroot</li>
      <li>Ginger</li>
      <li>Potato</li>
      <li>Radish</li>
    </ol>
    <ol type = "i">
      <li>Beetroot</li>
      <li>Ginger</li>
      <li>Potato</li>
      <li>Radish</li>
    </ol>
    <ol type = "A">
      <li>Beetroot</li>
      <li>Ginger</li>
      <li>Potato</li>
      <li>Radish</li>
    </ol>
      <ol type = "a">
      <li>Beetroot</li>
      <li>Ginger</li>
      <li>Potato</li>
      <li>Radish</li>
    </ol>
  </body>
```

The start Attribute

You can use **start** attribute for <ol> tag to specify the starting point of numbering you need. Following are the possible options −

<ol type = "1" start = "4"> - Numerals starts with 4.
<ol type = "I" start = "4"> - Numerals starts with IV.
<ol type = "i" start = "4"> - Numerals starts with iv.
<ol type = "a" start = "4"> - Letters starts with d.
<ol type = "A" start = "4"> - Letters starts with D.

Example

Following is an example where we used <ol type = "i" start = "4" >

```
  <body>
```

```
    <ol type = "i" start = "4">
      <li>Beetroot</li>
      <li>Ginger</li>
      <li>Potato</li>
      <li>Radish</li>
    </ol>
  </body>
```

HTML Definition Lists

HTML and XHTML supports a list style which is called **definition lists** where entries are listed like in a dictionary or encyclopedia. The definition list is the ideal way to present a glossary, list of terms, or other name/value list.

Definition List makes use of following three tags.

- <dl> − Defines the start of the list
- <dt> − A term
- <dd> − Term definition
- </dl> − Defines the end of the list

```
<body>
  <dl>
    <dt><b>HTML</b></dt>
    <dd>This stands for Hyper Text Markup Language</dd>
    <dt><b>HTTP</b></dt>
    <dd>This stands for Hyper Text Transfer Protocol</dd>
  </dl>
</body>
```

HTML - Meta Tags

HTML lets you specify metadata - additional important information about a document in a variety of ways. The META elements can be used to include name/value pairs describing properties of the HTML document, such as author, expiry date, a list of keywords, document author etc.

The **<meta>** tag is used to provide such additional information. This tag is an empty element and so does not have a closing tag but it carries information within its attributes.

You can include one or more meta tags in your document based on what information you want to keep in your document but in general, meta tags do not impact physical appearance of the document so from appearance point of view, it does not matter if you include them or not.

Adding Meta Tags to Your Documents

You can add metadata to your web pages by placing <meta> tags inside the header of the document which is represented by **<head>** and **</head>** tags. A meta tag can have following attributes in addition to core attributes −

Sr.No	Attribute & Description
1	**Name** Name for the property. Can be anything. Examples include, keywords, description, author, revised, generator etc.
2	**Content** Specifies the property's value.
3	**Scheme** Specifies a scheme to interpret the property's value (as declared in the content attribute).
4	**http-equiv** Used for http response message headers. For example, http-equiv can be used to refresh the page or to set a cookie. Values include content-type, expires, refresh and set-cookie.

Specifying Keywords

You can use <meta> tag to specify important keywords related to the document and later these keywords are used by the search engines while indexing your webpage for searching purpose.
Following is an example, where we are adding HTML, Meta Tags, Metadata as important keywords about the document.

```
<!DOCTYPE html>
<html>
    <head>
    <title>Meta Tags Example</title>
    <meta name = "keywords" content = "HTML, Meta Tags, Metadata" />
  </head>
    <body>
    <p>Hello HTML5!</p>
  </body>
  </html>
```

Document Description

You can use <meta> tag to give a short description about the document. This again can be used by various search engines while indexing your webpage for searching purpose.

```
<!DOCTYPE html>
<html>
  <head>
    <title>Meta Tags Example</title>
    <meta name = "keywords" content = "HTML, Meta Tags, Metadata" />
    <meta name = "description" content = "Learning about Meta Tags." />
  </head>

  <body>
    <p>Hello HTML5!</p>
  </body>
  </html>
```

Document Revision Date

You can use <meta> tag to give information about when last time the document was updated. This information can be used by various web browsers while refreshing your webpage.

```
<!DOCTYPE html>
<html>
  <head>
    <title>Meta Tags Example</title>
    <meta name = "keywords" content = "HTML, Meta Tags, Metadata" />
    <meta name = "description" content = "Learning about Meta Tags." />
    <meta name = "revised" content = "Vajra Coding Club, 3/7/202 4" />
  </head>
  <body>
    <p>Hello HTML5!</p>
  </body>
</html>
```

Document Refreshing

A <meta> tag can be used to specify a duration after which your web page will keep refreshing automatically.
If you want your page keep refreshing after every 5 seconds then use the following syntax.

```
<!DOCTYPE html>
<html>
  <head>
    <title>Meta Tags Example</title>
    <meta name = "keywords" content = "HTML, Meta Tags, Metadata" />
    <meta name = "description" content = "Learning about Meta Tags." />
    <meta name = "revised" content = "Vajra coding club, 3/7/2024" />
```

```
    <meta http-equiv = "refresh" content = "5" />
  </head>
  <body>
    <p>Hello HTML5!</p>
  </body>
</html>
```

Page Redirection

You can use <meta> tag to redirect your page to any other webpage. You can also specify a duration if you want to redirect the page after a certain number of seconds.

Following is an example of redirecting current page to another page after 5 seconds. If you want to redirect page immediately then do not specify *content* attribute.

```
<!DOCTYPE html>
<html>
  <head>
    <title>Meta Tags Example</title>
    <meta name = "keywords" content = "HTML, Meta Tags, Metadata" />
    <meta name = "description" content = "Learning about Meta Tags." />
    <meta name = "revised" content = " Vajra coding club, 3/7/2024" />
    <meta http-equiv = "refresh" content = "5; url = http://www.vajracodingclub.com" />
  </head>
  <body>
    <p>Hello HTML5!</p>
  </body>
</html>
```

Setting Cookies

Cookies are data, stored in small text files on your computer and it is exchanged between web browser and web server to keep track of various information based on your web application need.

You can use <meta> tag to store cookies on client side and later this information can be used by the Web Server to track a site visitor.

Following is an example of redirecting current page to another page after 5 seconds. If you want to redirect page immediately then do not specify *content* attribute.

```
<!DOCTYPE html>
<html>
  <head>
    <title>Meta Tags Example</title>
    <meta http-equiv = "cookie" content = "userid = xyz; expires = Wednesday, 08-Aug-15 23:59:59
GMT;" />
  </head>
  <body>
    <p>Hello HTML5!</p>
  </body>
</html>
```

If you do not include the expiration date and time, the cookie is considered a session cookie and will be deleted when the user exits the browser.

Setting Author Name

You can set an author name in a web page using meta tag. See an example below −

```
<!DOCTYPE html>
<html>
  <head>
    <title>Meta Tags Example</title>
    <meta name = "keywords" content = "HTML, Meta Tags, Metadata" />
    <meta name = "description" content = "Learning about Meta Tags." />
    <meta name = "author" content = " Vajra coding club" />
  </head>
  <body>
```

```
    <p>Hello HTML5!</p>
  </body>
</html>
```

Specify Character Set

You can use <meta> tag to specify character set used within the webpage.

By default, Web servers and Web browsers use ISO-8859-1 (Latin1) encoding to process Web pages. Following is an example to set UTF-8 encoding −

```
<!DOCTYPE html>
<html>
  <head>
    <title>Meta Tags Example</title>
    <meta name = "keywords" content = "HTML, Meta Tags, Metadata" />
    <meta name = "description" content = "Learning about Meta Tags." />
    <meta name = "author" content = " Vajra coding club" />
    <meta http-equiv = "Content-Type" content = "text/html; charset = UTF-8" />
  </head>
  <body>
    <p>Hello HTML5!</p>
  </body>
</html>
```

To serve the static page with traditional Chinese characters, the webpage must contain a <meta> tag to set Big5 encoding −

```
<!DOCTYPE html>
<html>
  <head>
    <title>Meta Tags Example</title>
    <meta name = "keywords" content = "HTML, Meta Tags, Metadata" />
    <meta name = "description" content = "Learning about Meta Tags." />
    <meta name = "author" content = " Vajra coding club" />
    <meta http-equiv = "Content-Type" content = "text/html; charset = Big5" />
  </head>
  <body>
    <p>Hello HTML5!</p>
  </body>
</html>
```